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CAR AND DRIVER

JUNE 2015

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AMG GTS
VS. F-TYPE R
AND 911 GTS

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photography by
James Lipman

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ROAD TEST
2016
CADILLAC
ATS-VFinally armed with
the power to
match its chassis.
by Eric Tingwall



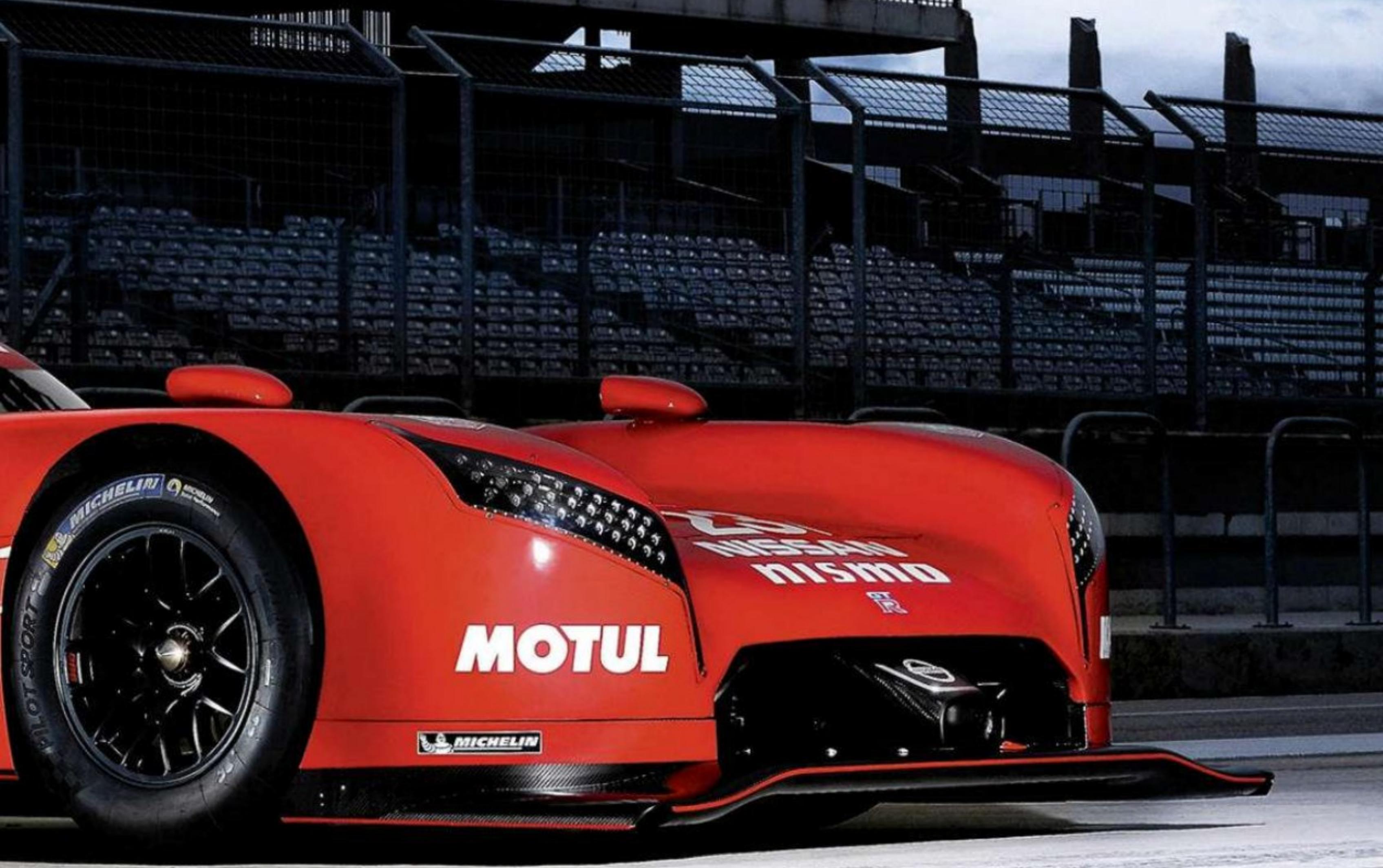
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WHAT THE TRUCK?

So how much crap are you going to get over the March cover? A pickup on the cover of *Car and Driver*. Well, I think it's cool. I live in northern Idaho, and we drive trucks. I like to read about the cars and dream, but most of them would be just a little impractical here. The one car we have is a Hemi Dodge Charger, and it has four-wheel drive. And now we can't buy a Hemi with four-wheel drive. Maybe a Raptor someday.

CLAY HESSON
OROFINO, IDAHO

The March issue of *Car and Driver* has a picture of a Ford F-150 Raptor on it. I guess next month's issue of *Truck and Driver* will have a picture of a Chevy Impala on it. I'm really confused.

DAVID P. HENRICKS
GREENWOOD, INDIANA

Is that a truck on the cover of *Car and Driver* (I'm doing that thing where I flip my glasses on and off the bridge of my nose multiple times)?

ROBERT ANDRES
SACRAMENTO, CALIFORNIA

In regard to the March 2015 magazine: Worst. Issue. Ever. A pickup, three SUVs, and three minivans? Remember,

backfires

hosted by ED.

009

06.2015

Sic your dogs on us at:
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or join the discussion at:
backfires.caranddriver.com



the first word in the magazine's title is "Car." At least there wasn't a Ford Mustang or a Chevy Corvette on the cover.

MIKE STUCKER
SUGAR LAND, TEXAS

*Car (kär) n: [< L *carrus, chariot*] 1. any vehicle on wheels—Ed.*

This has to be one of the best issues ever! I am saving pennies for the new Raptor, and I have to get my hands on that BMW i8 for sure. Good job!

ROB COUTTS
GLENDALE, ARIZONA

HARD TIMES

Raptor [March 2015]! Oh, swell. Your readers have gotten used to the growing ad pages for male-enhancement products, and now we have a product tie-in on the front cover. I thought this was a car magazine because, you know, the title and all. If you were honest, you'd rename this one "Male Enhancement Monthly" and start a sister publication that had articles on say, just as an example, cars. You could name the new one "Car and Driver." One monthly dedicated to men who experienced toilet-training trauma in childhood, and one for people who like to read about cars! With ads about, like, car stuff.

This Raptor issue is surely at the top of the waiting-room heap in urologists' offices nationwide. Jeez, it's even Viagra blue.

I can tell I'm losing you. Never mind.

WALTER KOCH

EARLYSVILLE, VIRGINIA

No, no. I hung on every word, Koch—Ed.

I hope I'm not the first one to notice this, but the first sentence of the Raptor preview doesn't make sense. It says,

"Ford's first F-150 Raptor hit like a meteorite," but meteorites don't hit like anything unless someone throws them; they've already "hit" the ground, that's why it's called a "meteorite." Before it hits the ground it's called a "meteoroid," so that should have been what it said.

COLIN HAMILTON
DETROIT, MICHIGAN

Not 'rite, Hamilton. A meteorite is the part of the space rock that enters the atmosphere and hits the ground. A meteoroid is the debris still floating in space. Also somewhat interchangeable with the term asteroid. Please bone up on your 'roids—Ed.

I wouldn't have been at all surprised to see "TONKA" on the grille of the Raptor instead of the blacked-out "FORD" writ large across its expanse. And, even after reading about it, I question the efforts to satisfy the perceived needs of a few with this four-wheeled codpiece, to the detriment of those of us still waiting for a realistic Ranger replacement. John Neffeler's comments [Backfires, March 2015] regarding the dearth of compact pickups were spot-on. Today's market offers few options. The new Chevy Colorado may be a remarkable truck, but the way it's being presented is pretty much a "take it or leave it" proposition. C'mon, Ford, bigger is not always better.

I fondly remember my 1993 Ranger Splash Stepside. It was a regular-cab truck with a rear window that I could easily reach back to slide open or shut. It had four-wheel drive and a manual five-speed. It had power steering, brakes, and mirrors, but hand-crank side windows. That truck, with a modern V-6 and six-speed manual, would be perfect.

JOE VENTURELLA
GRAND RAPIDS, MICHIGAN

SIZE MATTERS

In regard to Mr. Alterman's column [Editor's Letter, March 2015] about people buying SUVs, pickups, crossovers etc.: The real reason people buy them instead of cars is because of the ease of getting in and out. Pickups, SUVs, and the much-maligned minivan have you sitting up higher for a better view of the road, and when you want to get out of one, all you have to do is turn in the seat and put your feet on the ground. It really has nothing to do with gas prices. People will always adjust their priorities to do what they really want.

ALLEN HOBBS

GRAND FORKS, NORTH DAKOTA

Eddie, if you really can't figure out why so many Americans buy trucks and huge SUVs, please turn to Aaron Robinson's column. Of all the car magazines, *Car and Driver* is probably the guiltiest of judging all cars by the same standards regardless of the car's intended market. I understand that a BMW 3-series is an excellent car, but its supportive seats wouldn't fit my fat American posterior. The impressive lateral g's that it's capable of wouldn't mean a thing when my fourth, big, fat buddy has to get a running start to get into the poor little car. And its excellent manual gearbox wouldn't do me much good as I'm leaned over it in my second hour of a snowy Chicago commute because the B-pillar is so thick I can't sit upright. My Chevy Tahoe does a much better job for me in these situations, despite its lack of road feel. Your magazine influences car companies. Now, we have German-fighting Cadillacs, sporty Lincolns, and compact Buicks. Those of us who want a La-Z-Boy on wheels need to buy a truck. Luckily, the auto industry sees this trend and now offers most trucks with luxury-car appointments. So, when Rolls-Royce responds to Mr. Robinson with an R-R 335i, don't be surprised when those of us who just want a luxo-boat with a bench seat start buying more trucks.

Thanks for the laughs.

BARZEEN VAZIRI

WHEATON, ILLINOIS

Speaking of Chicago beef, are you an Al's or a Johnnie's guy?—Ed.

. **editor's letter**

For a magazine to last, it has to be more than just a timely catalog of word and image. There is also the alchemical aspect.

When its features and photos and headlines and captions and story selection get stitched together with purpose, something akin to a personality emerges. That's when a magazine comes alive, when it sits down on the couch with you and tells you exactly what it thinks.

Cars are no different. The great ones meet their deadlines, their price targets, and their demographic profiles, just like the unremarkable ones. But the great ones have a living, breathing quality that makes them loyal and lovable dogs.

I'm writing about the relationship between these two things here, at this moment, because the magazine you are reading is going to celebrate its 60th birthday next month. I have been fortunate to hold title to 10 percent of those years. And, like many of you, I wonder how I got so lucky. In a lifetime of irresponsibility, it has been my great responsibility. And in a lifetime of great joys, it is among my greatest. Not only because I get to live among cars and the people who make them, but because I inherited a tradition of writing and adventure taking that is unparalleled in the world of automotive journalism.

Davis, Yates, Sherman, Phillips, O'Rourke, McCall, Weith, Lindamood, Ludvigsen—they all made it so. They gave this magazine the place in our culture it occupies now. From Dan Gurney for President in 1964 to the first Cannonball Baker in '71 to Save the Manuals! in 2010, *C/D* has earned its longevity with its bullish, boundary-pushing personality. Often irascible, sometimes wrong, but never in doubt, *C/D* has, for six decades, been more than a second-order commentary on cars and their business. It has been a factor in that business itself.

If I am a steward of this tradition, then you are, too. After all, our readers are the reason this magazine exists. The entire point of this long-range field study is to make you happy and/or irate, to feed your thirst for information, to make sure you win every damn bar bet about roadholding numbers and quarter-mile times. Remember, all of us working here were part of the audience at one point. When we're doing research in the office library and come upon Enzo Ferrari's auto-

ography, ex libris Brock Yates, signed in the purple pen of *il Commendatore* himself—the chills, how you say, they are going up and down the spine.

We are all reading from the same hymnal. To celebrate that affinity, we want your stories (and photos and videos) about your cars. When did you start reading the magazine or the site? What is your favorite car? What about the best or worst one you or your family has owned? We are collecting war stories, just as we do every month. But next month will be special.

Your submissions will live online at www.caranddriver.com/readerstories. Visit the site to contribute.

Eddie Alterman
EDITOR-IN-CHIEF



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. backfires

THE SHOCKER

I was stopped short by your headline for the article about the improved Chevrolet Volt ["Lightening Volt," March 2015]. The mention of the car's curb weight dropping more than 200 pounds near the article's end seems to have, at best, a tenuous connection to the headline's size. Consequently, I must conclude that nobody at *Car and Driver* can spell "lightning."

BRUCE HENDLER

GLEN RIDGE, NEW JERSEY

The new Volt looks like a Civic with an aluminum-foil grille. How original.

DON T. SMITH

KINGSTON, ONTARIO

Ah! I finally saw the subhead for the article about the Chevrolet Volt. You know, where it says "adds muscle and range, sheds fat"? So, I get the joke.

I apologize to the editorial staff at *Car and Driver* and extend a special apology to John Pearley Huffman for making a dumb mistake of my own, carried away by an overwhelming urge to play "gotcha" over a perceived spelling error. For shame. I'll go away now.

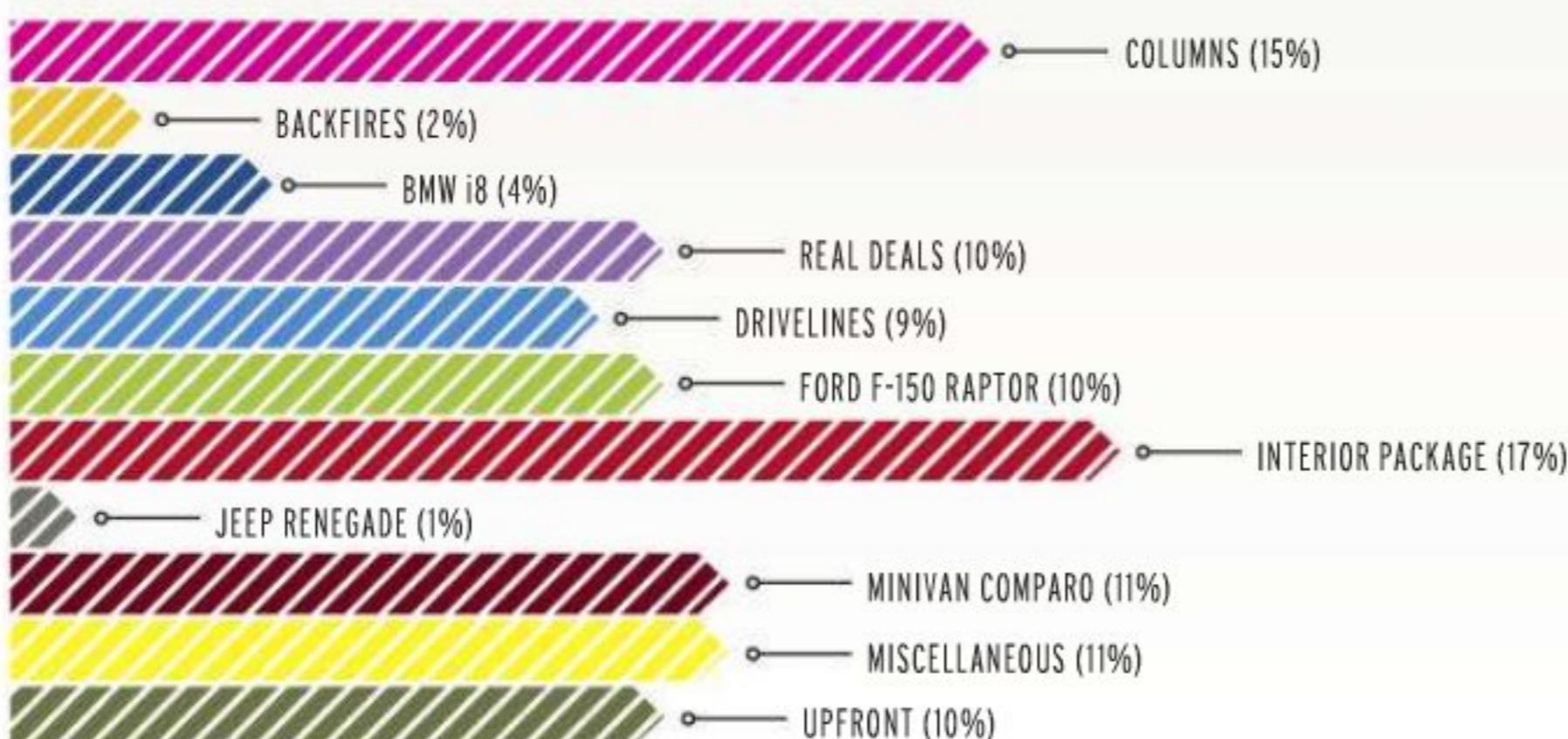
BRUCE HENDLER

GLEN RIDGE, NEW JERSEY

DEAR JOHN

I am going to sue *Car and Driver* magazine along with John Phillips for

★ BARS OF MAIL



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maybe a Dodge Challenger SRT Hellcat and a Fiat.

GEORGE KOVACH
YOUNGSTOWN, OHIO

Why was John Phillips's "Drive-Thru Torts" column in the March issue? I had to check the cover to make sure I wasn't reading the April issue!

JOHN THOMPSON
BUFFALO, NEW YORK

According to United States census data, the state of Montana has 0.003 percent of the population of this country. I suspect that is also the percentage of persons who understand the inside jokes used by Montana-desk editor John Phillips. For better or worse, I am not a member of that extreme elite. Thus, reading his monthly column becomes an act of questioning my sanity versus his. To my surprise, his column "Drive-Thru Torts" did not require any existential jumps in logic. I hope he keeps this up. I fear the irreverence that your journal so values and that Mr. Phillips so epitomizes may in fact become irrelevance.

MICHAEL SIM
ELK GROVE, CALIFORNIA

i8 ALL OF IT

Regarding the extras on the BMW i8 ["To Live and Drive in L.A.," March 2015]: What exactly is the option package "Pure Impulse World"? Was it worth \$10,800,

IT IS ONLY WHEN WE FORGET ALL OUR LEARNING
THAT WE BEGIN TO KNOW — *HENRY DAVID THOREAU*



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★ LETTER OF THE MONTH



Dear John,
Thank you for wasting my time.

RUSS HEMMIS
VALENCIA, CALIFORNIA

and was it particularly useful during your testing in Los Angeles?

JESSE ROBBINS
BURLINGTON, VERMONT

I read the test of the BMW i8 with interest. I noticed the "Pure Impulse World" option was listed for the stately sum of \$10,800. I decided to check the BMW website to peruse just what one actually gets with a Pure Impulse World. Wow! For \$10,800, I get a gray interior, with blue seatbelt "straps" and seat lettering, and brakes that actually say BMW i8. Plus a ceramic gearshift-lever insert so I can shift oh-so-much faster. But of course the doorsills feature an i8 logo, too. And to top it off is a leather engine cover AND a BMW i Pure Impulse Card that shows everyone just how stupid I am to purchase a \$10,800 frill package that offers little for the money.

The Ultimate Dodo Machine has come. What happened to a time where Pure Impulse meant asking a girl on a date on a moment's notice?

BOB CENTO
VINELAND, NEW JERSEY

What you neglected to mention is that the i8's listed sale price is also strictly sci-fi. I had some interest in obtaining one until speaking with dealers on both coasts. They unapologetically informed me that the car will have up to a \$100K premium added to the list price. The smallest such robbery I found was in the range of \$60K. "Check with us in a couple of years" was a common response. As a longtime BMW purchaser, I'm annoyed that BMW allows this behavior among its dealers, but they are car dealers, after all, and price-gouging is just a matter of doing business for them.

RON FREUND
LOS ANGELES, CALIFORNIA

RENEGADE PRICING
I am suffering from dislocated-

jaw syndrome after checking the as-tested price of \$33,180 for the Jeep Renegade Limited 4x4 ["Rainforest (Cafe) Expedition," March 2015]. Not to criticize how others spend their money, but I just can't get beyond that number. Faint murmurs in the background of my mind echo some quote from P.T. Barnum, but I can't quite make it out.

MARK HUSTON
BRATTLEBORO, VERMONT

DEPARTMENT OF THE INTERIOR

There is no arguing that the new Mercedes-Benz C-class interior is a vast improvement ["Guide to the Modern Automotive Interior," March 2015], however, even a supermodel with a pepperoni-sized zit on her forehead knows that everyone's focus is going to constantly lock in on that third eye no matter how beautiful she is! During my

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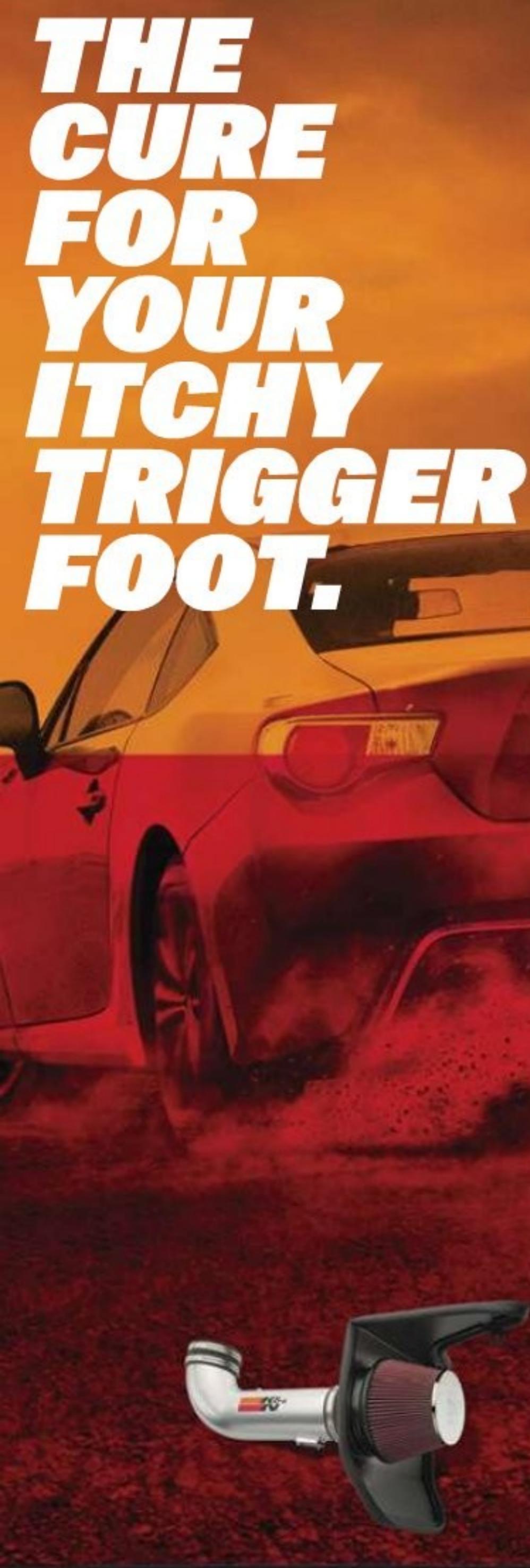
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test drive I wanted to soak in the upgraded materials and improved ergonomics, but all my attention was absorbed by the ridiculous afterthought that is the eight-inch tablet on a stick. I've seen hand-held nav systems suction-cupped to the windshield that looked more integrated!

NICHOLAS SLEBIOIDA
BUFFALO, NEW YORK

I am annoyed and puzzled by the lack of design continuity between the dashboard and door panels of most cars. How difficult can it be to provide some element of commonality? Certainly the mismatched mash-up is apparent to the design staffs when they review virtual and actual models prior to production. Apparently, it is of no consequence to them, even though their principle objective is aesthetics.

JIM DUFF
OMAHA, NEBRASKA

You say that the Mazda 3's flip-up speed display will fulfill "all" my *Top Gun* fantasies. Does it have vintage Kelly McGillis?

CHAD JONES
MONCKS CORNER, SOUTH CAROLINA

I envision an invisible icon in head-up display controlling driver's functions in the modern auto's "cap'n chair!" Could the techies handle an antique, say with arc lights and making spark-advance decisions? If you can't left- or right-click it, what good is it? I'm surprised the keyboard is now more "alive" than ever—although mostly for communication formerly kept in a "secret diary!" Guess Facebook tore up that old notion! Hahaha!

O. KLEYTON COOPER
CLEVELAND, OHIO

Hunter S. Thompson once said, "When

the going gets weird, the weird turn pro."
To which I'd add, "and write letters to Car and Driver"—Ed.

VAN STUFF

From the introduction of the minivan test, "Billions of years from now... the universe will collapse back on itself" isn't likely to happen ["What Do Minivans and Waterslides Have in Common?" March 2015]. The critical density of the universe by best current estimates suggests that it will not reverse into a "big crunch," but will instead continue expansion forever until it's in the highest possible entropy state and heat can no longer flow. Grab a blanket.

B.L.
PORTSMOUTH, NEW HAMPSHIRE

How am I supposed to trust your opinions on vehicles if you don't even know that the preponderance of evidence suggests that the universe is not going to collapse back in on itself but instead will expand forever until everything dies in what is referred to as the Big Freeze? You expect me now to cite *Car and Driver* to my nonenthusiast friends that the best choice for their vicious rug rats is a Toyota Sienna Limited? I don't think so.

JIN H. KIM
BUENA PARK, CALIFORNIA

I was on pins and needles reading Jared Gall's comparison test with the Kia Sedona SXL. In his words, the Sedona was "imminently controllable." Dear god, did he ever regain control?

CHRIS BELLER
DURANGO, COLORADO

Gall remains eminently out of control—Ed.

I would normally leave something like a minivan comparison (snore) to the bitter end of bedtime or desperate toilet

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reading, but because Jared Gall wrote the piece, I read it second, right after the letters. In the wrong hands, that piece would have been a total dud, fit for R&T, but Gall saved it with witty writing, insight, and just the right amount of smart-assery. Bravo.

NATE SMITH

BUFFALO, NEW YORK

Regarding the minivan comparison test in the March issue: Who decided to exclude the Chrysler Town & Country? It's very insulting. We have previously owned two Honda Odysseys. Liked them a lot. We've also driven the Toyota Sienna many times. Now we own a Town & Country. Comparison-shopped for a long time. The T&C was a better value this time. My wife loves it. And she's tough to please.

STEVE ROGOW

FLEMINGTON, NEW JERSEY

The T&C finished second to the Honda Odyssey in our last minivan test; without a significant update or redesign, it didn't get invited back—Ed.

Yo. I'm 80, retired, and own a Dodge Grand Caravan. Travel a lot. Seats in the floor. [Fits] lots of suitcases for many days of travel. And two wheelchairs. At destination, all seven filled seats go to the Yankees, to the beach in Miami, the salmon in Seattle. And two wheelchairs. And 24.8 mpg. "Cruelly," the BMW has finally lost!

FAST EDDIE AND LOVEY
INTERNET, USA

Kids, repetition is used for emphasis in poetry. I think that's what this is—Ed.

SHOT DOWN

I was sure that the Seahawks' decision to throw the ball instead of running it at the end of the Super Bowl would go down as the dumbest thing in the history of the human race. The next day I opened up the March issue to page 86 and saw the Polaris Slingshot. I was wrong.

SCOTT E.
BARRON, WISCONSIN

RISKY BUSINESS

As the proud owner of a 2008 BMW 550i, I found the Real Deals article on buying guidance both relevant and understated in regard to my "road assassin" ["Risk Management," March 2015]. I had just taken it to the dealer for servicing at the 76,000-mile interval and asked them to check a small leak I had noticed on my

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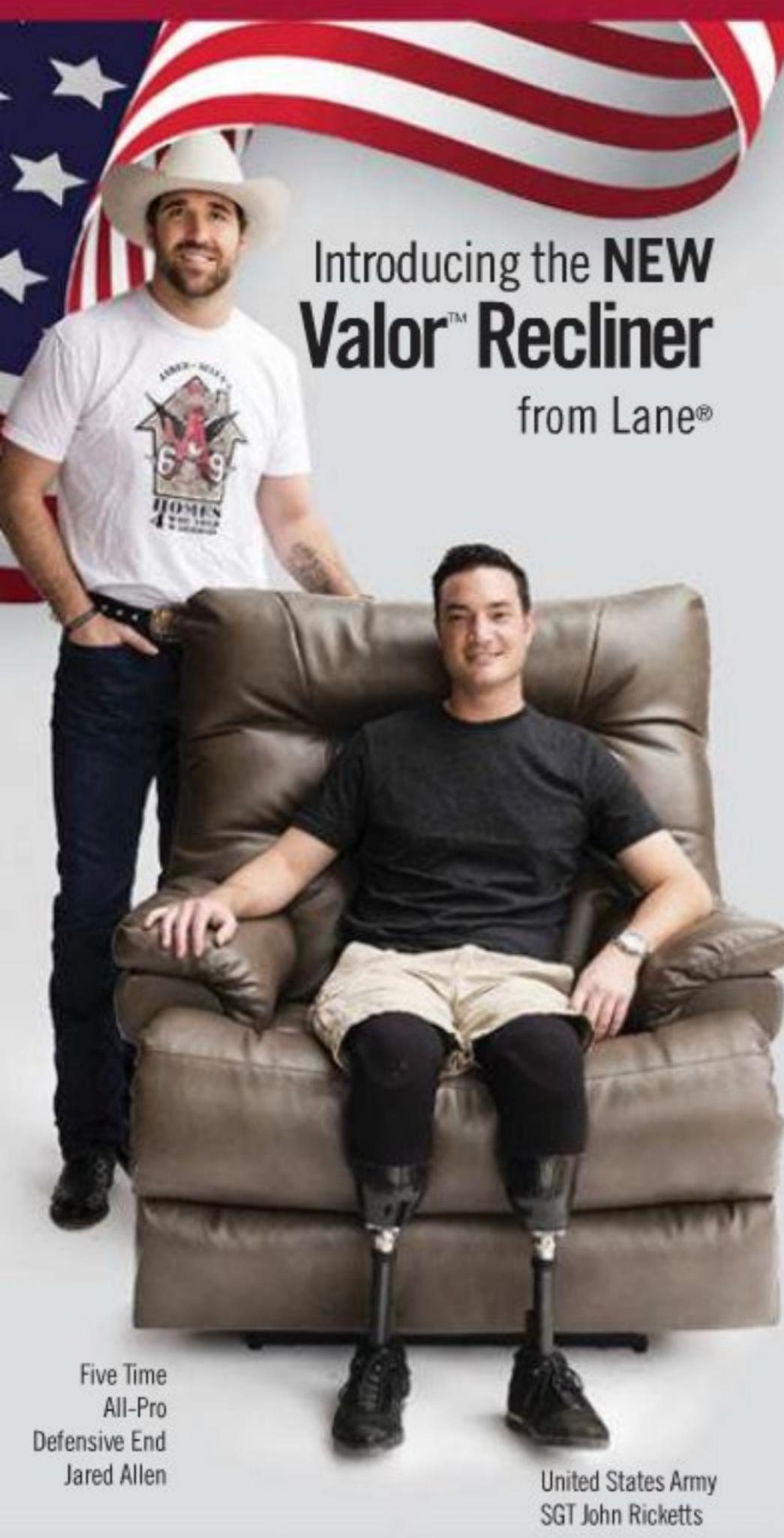
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garage floor. Seven thousand, five hundred dollars later, I painfully understood the reference to "doubt your own judgment for buying one of these cars." Oil leaks from a vacuum pump, an oil-pressure sensor, a left upper-timing-cover gasket, a seal at the left engine mount, and an alternator-bracket gasket. The only thing the dealer couldn't fix was the anal leakage when I received the bill.

DAVID KEEFE
SAN JOSE, CALIFORNIA

Try an inflatable donut pillow—Ed.

Very interesting Real Deals. The 2009 Mazda MX-5 Miata mentioned is a great choice—we have a 2010 that's been a blast. Regarding the importance of fluid changes and costly differential replacement you mention, your readers should be aware of a recent technical service bulletin (TSB) from Mazda that calls for complete replacement of whining differentials in certain models. Buying a certified car gives some extra assurance, that's for sure.

KIRK RIDER
GRAND JUNCTION, COLORADO

ON PRANCER

In your March 2015 issue, Econo Exotics, page 112, James Tate very clearly makes a compelling case for steering clear of the Ferrari F355. Not that I was looking to buy one, but a big thanks to Tate for providing the information needed to avoid driving off the fiscal cliff of owning this car. It appears everything on this car will fail at some premature interval, and it may cost you a mere \$500 per month just to maintain it. Okay, so it is a Ferrari. Where is the real value in these aging "exotics"?

L. BEALL
CALABASH, NORTH CAROLINA

So my 60th birthday rolled around. What better way to celebrate than by checking off bucket-list goal No. 4: buying a '97 F355 Spider? Sure, the servicing costs are seven-fold over a Corvette, but when the 3.5-liter 40-valve V-8 screams, if the bucket containing the list is kicked, my response is: It was well worth it.

TOM FERRARA
POUND RIDGE, NEW YORK

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★ A CAR WITH MANY NAMES

Internally it's known as the P13. Officially its name is 570S. But McLaren insiders also refer to this car as the Sports Series, a term that encompasses the full low-end range, including future spider and long-tail variants.

upfront

□ edited by JARED GALL

McLAREN'S ENTRY-LEVEL CAR IS ACTUALLY LARGER THAN ITS BIG BROTHER. THE 570S MEASURES 0.7 INCH LONGER AND IS MARGINALLY TALLER AND WIDER THAN THE 650S.



. REVEAL OF THE MONTH

Little Mac

McLAREN ASSEMBLES A FAMILIAR SET OF INGREDIENTS TO MAKE THE 570S, ITS PORSCHE 911 TURBO S FIGHTER.

by Eric Tingwall

JUST AS GERMAN carmakers have mastered the art of slicing sausages into different lengths, such that an Audi A6 seems like just a foot-long hot dog to the A4 ballpark frank, McLaren's staple ingredients are now being spread over a full menu. It ranges from the Big Mac—the million-dollar P1—to this new value-oriented 570S from the, uh, 180,000-dollar menu. With the 570S, McLaren replaces the special sauce in the 650S's suspension with ketchup, takes a bit of beef out of the powertrain, and



IN STANDARD SPEC, THE CARBON-FIBER BITS ON THIS UPLEVEL CAR GET FINISHED IN PALLADIUM GRAY; THE MATERIAL IS EITHER ALUMINUM OR A PEDESTRIAN PLASTIC.

serves it in a familiar wrapper as an alternative to the Porsche 911 Turbo S. When it goes on sale at the end of the year, the 570S will join the Acura NSX, the Audi R8, and the BMW i8 in the burgeoning class of sub-Ferrari almost-supercars.

□ TUB

True to the McLaren recipe, the 570S begins with a carbon-fiber passenger cell sandwiched between aluminum substructures. Now called MonoCell II, the tub features sills slimmer than the wide, tall rails of the 650S and the P1. That should make it easier to enter and exit the car, playing to the 570S's intended purpose as a daily driver for those who take their Sunday drives in Gulfstream jets.

To strengthen the reshaped sills, engineers added 11 pounds of carbon fiber to the naked tub, which now weighs 176 pounds. McLaren reports a dry weight of

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upfront . REVEAL OF THE MONTH

CALM DOWN, MCLAREN NERDS. THIS ISN'T EXACTLY THE SAME TUB AS THE P1 USES. THIS ONE'S MODIFIED FOR EASIER ENTRY AND EXIT.



2895 pounds for the 570S. Curb weight should reach a tidy 3100 pounds by the time the car is properly fueled, cooled, and lubricated. If that number proves accurate, the 570S will weigh in roughly 500 pounds lighter than the four-wheel-drive 911 Turbo S.

POWERTRAIN

Like the pricier 650S, the new 570S derives its name from the output of its 3.8-liter V-8 in *Pferdestärke*, or PS, which is metric horsepower. That's 562 horses in the units we use. Torque is rated at 443 pound-feet. While the displacement of the twin-turbo engine matches that of the 650S and P1, the hardware changes are substantial enough—though McLaren wasn't prepared to divulge details—to warrant a new engine code (M838T E). Italy's Graziano supplies the seven-speed dual-clutch automatic.

Since McLaren remains an unwavering advocate for rear-wheel drive, the 570S won't match the 911 Turbo S's 2.5-second zero-

to-60 time warp. The Brits say their car will rocket to 62 mph in a still-swift 3.2 seconds, but also claim that a best-in-class power-to-weight ratio will give them the edge in any race to triple-digit speeds. Keep your foot in it long enough and the 570S will eventually top 200 mph.

Concurrent with the 570S's New York auto-show debut, McLaren unveiled in Shanghai the 540C, a less powerful, less aggressive, and less expensive version that could make its way to the United States. Without committing to selling it here, a McLaren rep did say the company would certify the 540C to keep options open. But McLaren must know that the Turbo S outsells the standard 911 Turbo two to one in America. We're not sure why it'd bother.

CHASSIS

The 570S locates its wheels with a pair of control arms at each corner just like its brethren, but McLaren's signature ProActive Chassis Control is conspicuously absent. That sophisticated and costly tech uses a hydraulic network to give the 650S and the P1 flying-carpet-ride quality and Ginsu-sharp handling. Instead, the 570S has conventional anti-roll bars and adaptive dampers that can



RUMORS OF A 911 FIGHTER FROM MCLAREN HAVE NOW MATERIALIZED AS A 911 TURBO S FIGHTER. WHAT'S AN EXTRA \$100,000, ANYWAY?

MCLAREN'S DESIGN LANGUAGE IS INSPIRED BY THE SR-71 BLACKBIRD, A WHALE SHARK, AND McDONALD'S GOLDEN ARCHES.



BECAUSE A RADIO DOESN'T MAKE A CAR ANY FASTER, THE 570S INCLUDES JUST FOUR SPEAKERS AS STANDARD EQUIPMENT. EIGHT- AND TWELVE-SPEAKER SYSTEMS ARE OPTIONAL.

MCLAREN WON'T CALL ITS 570S A SUPERCAR, BUT WE KNOW SUPERCAR DOORS WHEN WE SEE THEM.

THE WIDE-ANGLE CAMERA IN THE FRONT FASCIA HELPS YOU BETTER SEE WHERE YOU'RE GOING WITHOUT LOOKING WHERE YOU'RE GOING.

be set to normal, sport, or track mode. Forged aluminum wheels measuring 19 inches in front and 20 inches out back roll on Pirelli rubber—either P Zeros or P Zero Corsas—and surround standard carbon-ceramic brake rotors.

■ DESIGN

There's no mistaking the 570S for anything but a McLaren, although you could easily mistake it for a 650S. Depending on how you feel about that, credit or blame a design language that prioritizes function over form. Chief designer Rob Melville says the surfaces "express the way the air moves around the car." The lower edge of the channel running through the door, for example, mimics the airstream that comes off the rear edge of the front tire. The shoulders of the doors feature floating "tendons," behind which the door releases lurk. Those off-the-moment flying buttresses funnel air around the greenhouse and over the vented decklid to extract hot air from the engine bay, increasing downforce by a claimed 22 pounds. As yet, the factory won't supply a total downforce figure.

While the P1 has an all-carbon skin and the 650S wears a mix of composite and aluminum, the 570S is wrapped entirely in aluminum in standard trim. The car on these pages represents a higher spec, with the roof, decklid, rockers, and front and rear fascias rendered in optional carbon fiber.

Whether in aluminum or carbon fiber, the 570S packs the same lightweight, mid-engined, rear-wheel-drive flavor that has allowed the Formula 1 experts at McLaren to insinuate themselves into Ferrari's business in a short time. Watch out, Porsche, you may be next.



TOTAL
NUMBER OF
COLORS
AVAILABLE:
1284

HUE AND CRY

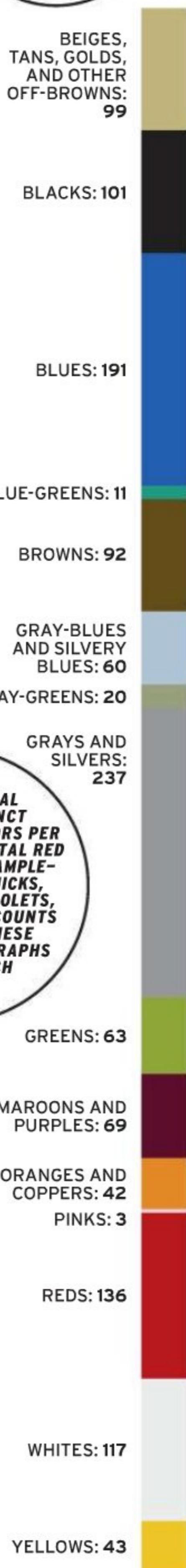
237 Shades of Gray

A PSEUDOSCIENTIFIC
LOOK AT THE AUTO
INDUSTRY'S COLOR
PALETTE. *by Jared Gall*

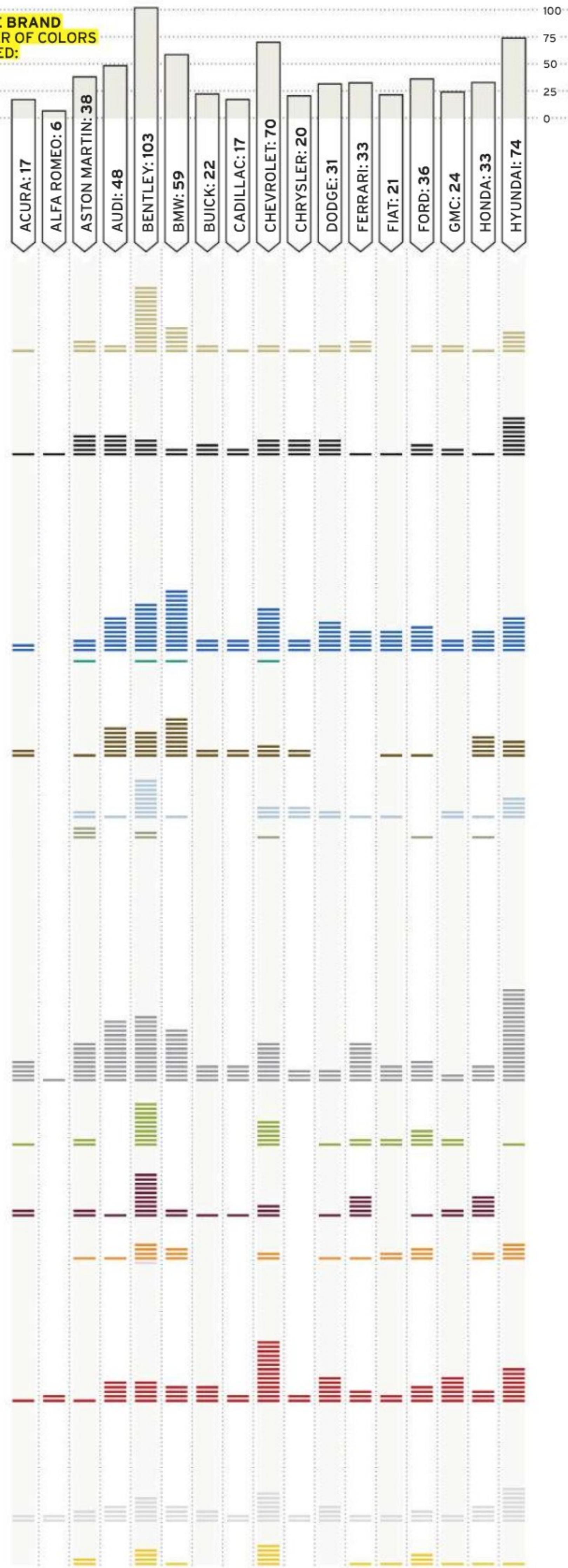
LAST YEAR, according to auto-industry paint giant PPG, white was the most popular car color in North America for the fourth year running. Before white took the top spot, America clutched silver to her steely heart for a full decade. Add up white, black, gray, and silver, and you've accounted for the paint jobs on 72 percent of new cars sold in 2014—nearly three in four are, essentially, colorless. C'mon, people.

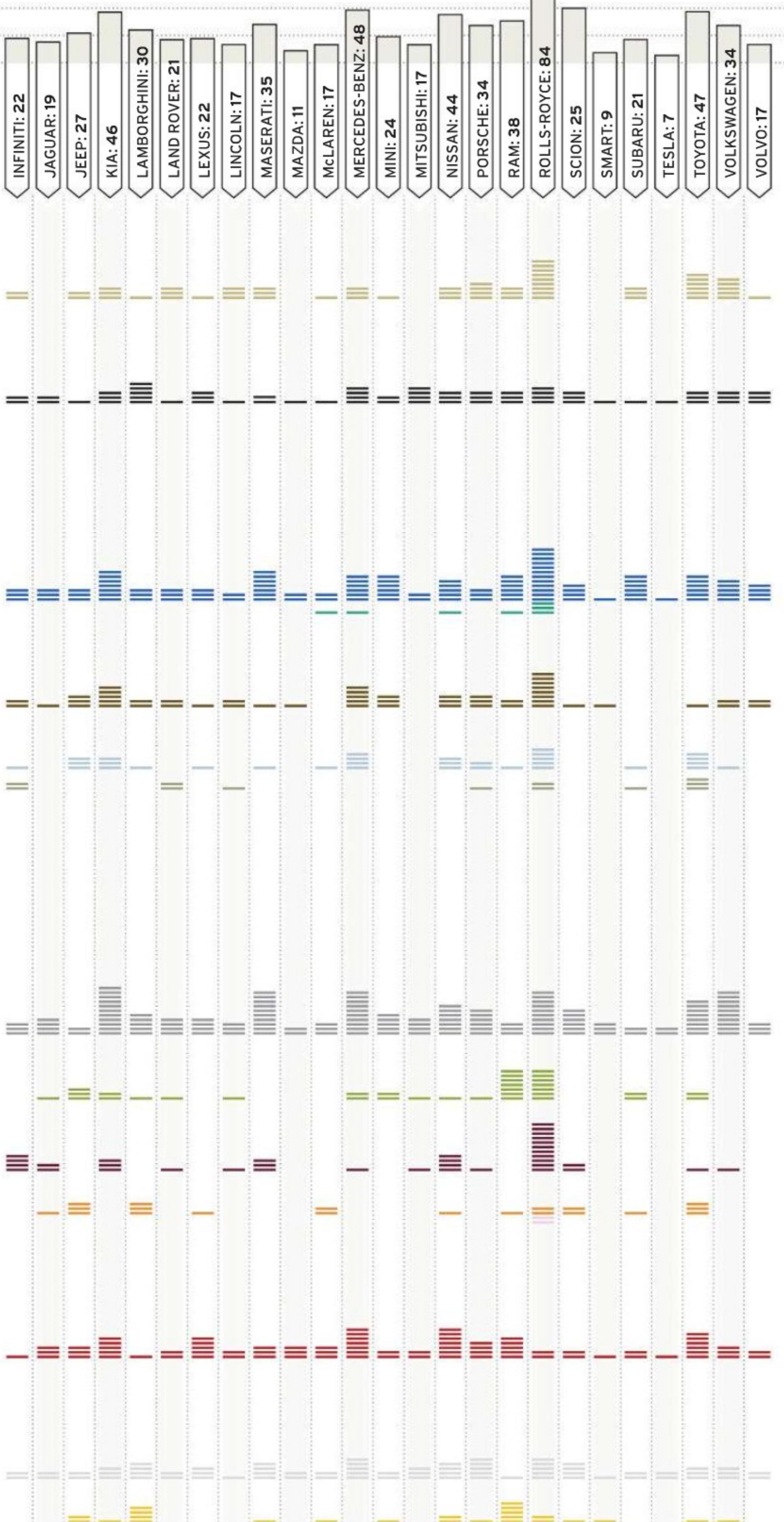
By our count, a person buying a car today can choose from nearly 1300 different hues (not including the nearly limitless offerings of some high-end companies' personalization programs). Of the 1284 available hues, 829 are actual colors, not just grayscale. And at least 207 of the automotive industry's 237 grays and silvers are extraneous, anyway: A recent study suggests that the human eye can only distinguish among about 30 shades of gray. So leave the Whites, Blacks, Grays, and Silvers on the lot, and go home with a Regal Peacock, a Green Envy, or a Tangerine Scream. Life is better in color.

THE 1284 TOTAL
TALLIES DISTINCT
COLORS, NOT COLORS PER
BRAND. GM'S CRYSTAL RED
TINTCOAT, FOR EXAMPLE—
AVAILABLE ON BUICKS,
CADILLACS, CHEVROLETS,
AND GMCS—ONLY COUNTS
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INCLUDE SUCH
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BY THE BRAND
NUMBER OF COLORS
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TODAY'S PAINT NAMES HAVE WELL-ESTABLISHED CONVENTIONS. HERE'S THE BREAKDOWN:

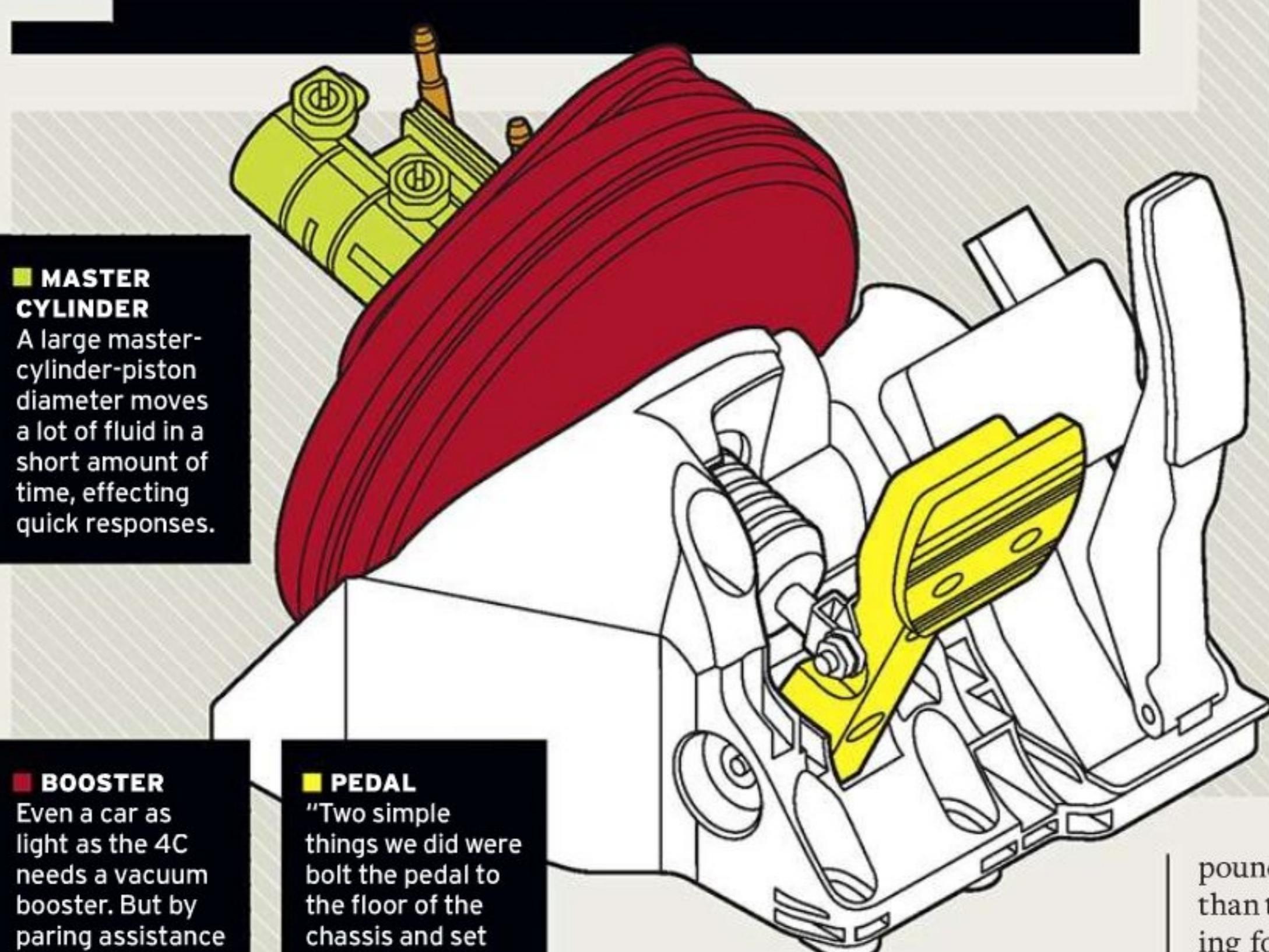


ALFA
ROMEO
4C

Braking Rad

DELVING INTO THE ELEMENTS OF GOOD BRAKE FEEL, WITH THE HELP OF ALFA'S SPECTACULAR 4C. *by Csaba Csere*

WE ALL LIKE FIRM, solid-feeling brake pedals. But even on good performance cars, modern brakes often feel vaguely synthetic, with more pedal travel than seems strictly necessary. Then there's the Alfa Romeo 4C. Its creators wanted the 4C to have a hard edge. "Our goal in development was to deliver the racing feeling and sensation," says Alberto Cavaggioni, head of Alfa's marketing, planning, and brand development. "We wanted the brakes to work more on brake pressure than travel." And so they do: Travel is short, the pedal has no give, and the brakes bite hard. A braking system is fairly simple; there's a pedal, a booster, hydraulic lines, and calipers. How did Alfa make its brakes so radically different, more like a race car's than a road car's? Engineers employed a handful of tricks, but the real answer is by optimizing every last part of the system. To wit:



MASTER CYLINDER

A large master-cylinder-piston diameter moves a lot of fluid in a short amount of time, effecting quick responses.

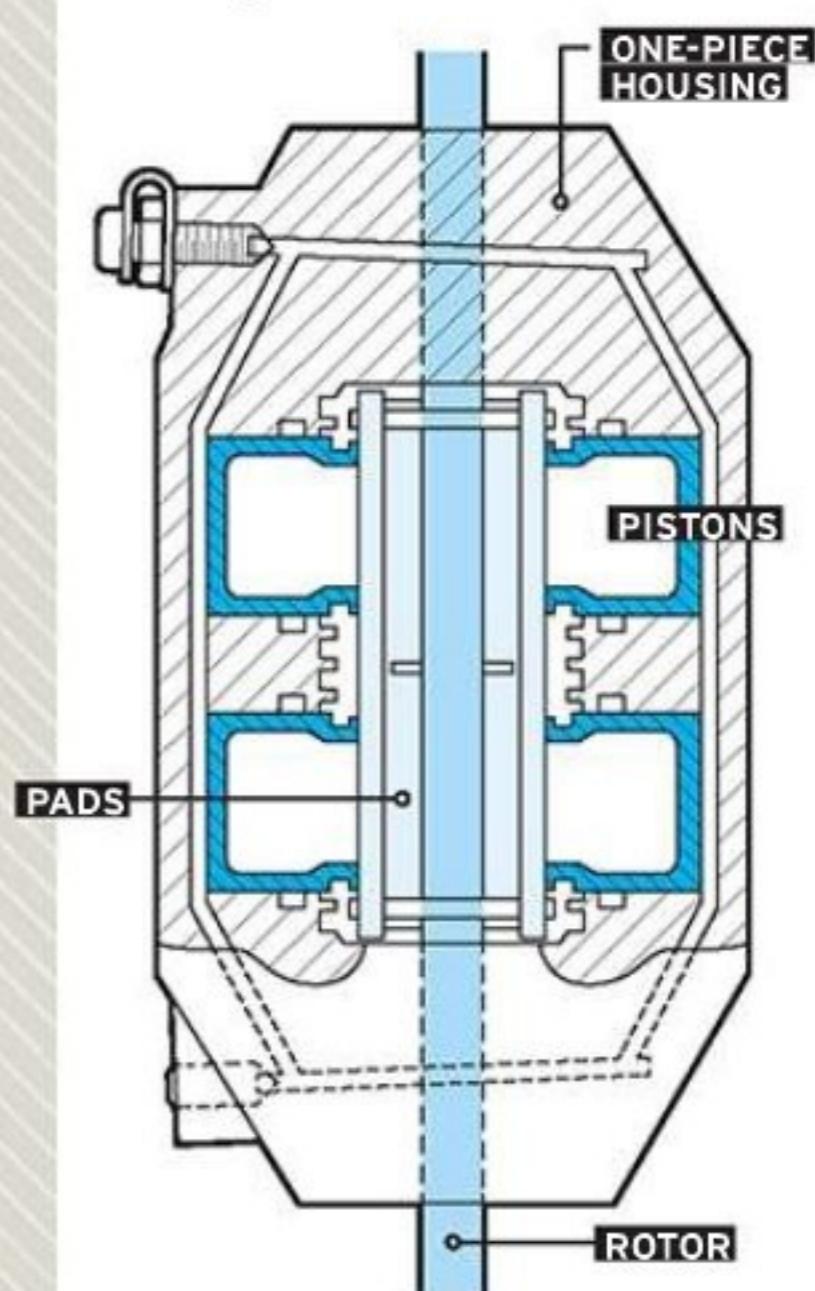
BOOSTER
Even a car as light as the 4C needs a vacuum booster. But by paring assistance to a minimum, engineers achieve a linear and tightly controlled response to pedal pressure.

PEDAL

"Two simple things we did were bolt the pedal to the floor of the chassis and set the angle of the pedal to provide perfect leverage," says Cavaggioni. "The angle of the pedal makes it easier to apply more force, and the floorboard is more rigid than a dash-mounted setup." Less flexing means truer pedal feel.

AND DON'T FORGET: This is all straightforward brake engineering, and any car could employ it. But to fully realize the benefits of these measures requires one other key ingredient—a light car. Regardless of vehicle weight, a driver can be expected to apply a maximum 50 pounds of force to the pedal. It is then up to hydraulic and mechanical leverage to bump that figure up to sufficient stopping force. Because the 4C weighs about 2500

CALIPERS It's all about stiffness. Caliper deflection translates into additional pedal motion. The 4C uses opposed-piston calipers, meaning that there are pistons on each side of the brake rotor, housed in a substantial, one-piece caliper. Most cars use single-piston calipers, which apply pressure to the brake pads by forcing two sliding caliper halves against the brake rotor—an inherently more flexible arrangement.



PADS The 4C's high-friction pads (Ferodo HP1000s, for truly geeky readers) are racing-derived.

LINES Stiff steel-and-rubber brake lines are a must for good pedal feel. The more hydraulic lines expand under pressure, the less precise the feel.

pounds, a thousand pounds or so lighter than the average car, it requires less braking force to produce a given amount of deceleration. The total leverage between the driver's foot and the front brake pads is 56:1 in the 4C, 72:1 in a Chevy Corvette Stingray, and 88:1 in a Toyota Camry (not counting the booster's contribution). When you reduce leverage and assistance, you also minimize real-world imperfections, such as pedal and caliper deflections, brake-hose expansion, and booster nonlinearity. That's why braking feel as pure as a 4C's is just about impossible to achieve in a heavier car.

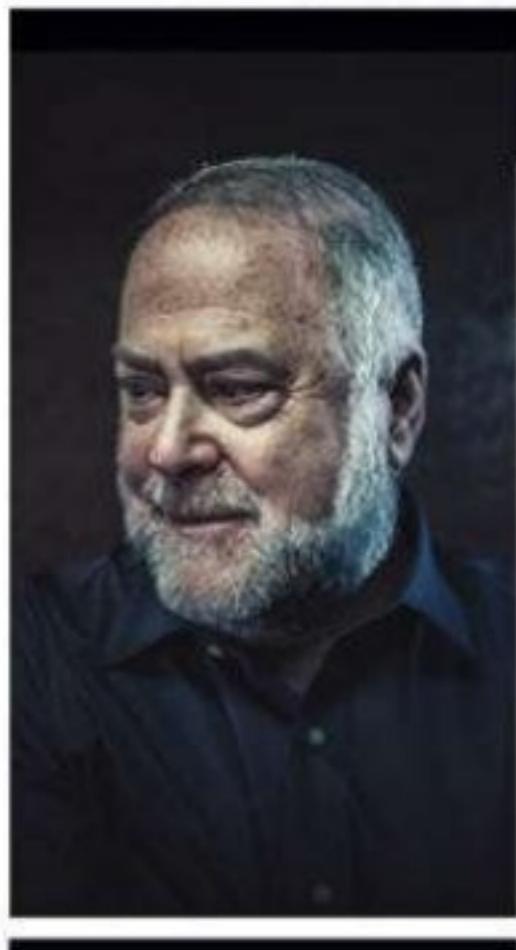


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by John Phillips

COLLECTING TOYOTAS.



Lots of people live in the mountains. I live on a mountain. Not the top, exactly. But I can see the top from my porch. The driveway leading to Dead Loss Ranch is a two-mile festival of filth—sucking mud, ice suitable for skating, ruts that sometimes flip ATVs, razors of granitic outcroppings, and a pair of mountain lions (Sid and Nancy) that recently tried to eat Red Schields's dogs at 1 a.m. The road is navigable at walking speed only.

Last month, my wife realized she needed the sort of vehicle that could handle, say, Mosul after the big drone strikes. She liked a black Volkswagen Tiguan (too little ground clearance), a Honda HR-V (ditto, also not available), then drove everything badged by Subaru. While testing a silver Forester,

she asked, "Is our driveway gonna break this little thing?"

"Not in the first week," I said.

So we purchased an army-green 2011 Toyota FJ Cruiser, with 45,000 miles and no signs of off-roading, with a year's warranty, for \$24,000. When negotiations concluded, it was too late to drive home, so we stayed in Missoula's Hampton Inn. At around midnight, I dashed down to the parking lot to celebrate the green wonderfulness of my purchase, but the FJ resembled a Minnesota ice-fishing shack under all the snow. I've written about cars for 40 years, so you'd think the fluttery giddiness of new-car ownership would wane. Nope. I could barely sleep. The FJ seemed the portal to all the world's happiness.

All Montanans carry a "bug-out bag." It's in case the FJ gets crushed by a Ponderosa pine on Magruder pass and I have to walk to another Hampton Inn. So, my survival pack now contains a handsaw, foil bivvy bags, MREs (weighing as much as Packard bumpers), solid-fuel tablets (a largish explosion might alert my rescuers), an army canteen the color of the FJ, a buck knife that would scare O.J., and 42 other items. Really, I counted them all. The bag is so dense that beams of light curve around it. Just for assurance, I tossed in some Percocets. I'm pretty sure I'll take only the Percocets.

So, that particular pack now reposes alongside my vehicle-retrieval pack, itself resembling a body bag filled with snatch straps, D-rings, a hand winch, chains, party hats, and so forth. All that tonnage may diminish the FJ's mileage—perhaps the reason that I get stranded in the first place.

I installed 265/65R-18 Goodyear Wrangler DuraTracs on black Method Fat Five wheels—the FJ now matches my Toyota Tundra—as well as a trailer hitch and a bull bar. Those last items required maybe four hours of me supine on cement colder than a coroner's office. At one point, I had to lower the FJ's exhaust, which rocketed off to gouge a

Noriega-quality divot in my chin. And one instruction for the bull-bar bracket stipulated 2010 and older FJs, which mine is not. But by then I'd already torched and tortured the attachments into interesting sculptures that fit. Duct tape may have been involved. I love the English language, but I rarely understand instruction manuals. I remember a manual for a Denon turntable that warned, "Do not subject the tonearm to twistery." That was the only instruction that ever made sense to me. By the way, snigger at my bull bar if you want, but I'm knee-deep in bulls here. Not just elk and moose and bighorn rams, but escaped bull bulls, all snorting and pawing and power-defecating 30 feet from my kitchen. Sometimes they'll eat stale éclairs.

My wife decreed the FJ homely, so she named it Frida, after artist Frida Kahlo, famous for her tarantula unibrow and for having married muralist Diego Rivera. Which means she has begun referring to my Tundra as Diego. It's mildly confusing, inasmuch as her previous name for it was the Big Blue Bastard. You might like to know that the FJ's registration says: "Vehicle Type: Rugged Terrain." Where else but Montana will the state officially validate your manhood?

As soon as Frida was winter-worthy, my wife looped Diego 180 degrees on ice covering our driveway's "Climbing Ess." I drove to her rescue, immediately fashioning a fantastically dangerous web of cables and straps and D-rings that could easily have killed all The Flying Wallendas. But it worked. So, kudos to the FJ's prowess, Week One.

When I moved to Montana, I envisioned many satisfying hours spent in my mountain-aerie garage, rebuilding an early '70s twin-cam Lotus Europa, an automobile so fragile that merely shipping it from the factory invited catastrophe. A good jostling by side winds can total a Europa. But for any Lotus to inhabit my garage, it will have to be air-dropped via twin-rotor Sikorsky. And, so, I've instead located a resto-worthy '77 FJ40 Land Cruiser in a Darby junkyard, and I am going to bid on it as soon as I calculate how much rust costs per pound. I may soon be flat-towing an FJ behind an FJ. Symmetry lowers your blood pressure. So do stale éclairs.



Bags of power? No. Bags of MREs, chains, straps, and explosives.

Racing Revolutionized

We sent enthusiast Chris Nelson to experience the first-ever fully electric race on U.S. soil.

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SWEEPSTAKES
WINNER**



"Formula E has a bright future, and the companies participating, like Michelin, are at the leading edge of technology and development."



From their seats at the Emotion Club, Michelin Formula E Sweepstakes winners Chris and Lynne Nelson had a view of both Turn 7 and Biscayne Bay in Miami. After watching Formula E races on television, Chris was mesmerized. And it was here that they saw firsthand how racing is being reinvented. That means an all-electric, single-seat race car that goes from 0-60 in 3 seconds, with a top speed of 150 mph, a groundbreaking battery that can deliver 270 hp, and pioneering new MICHELIN® Pilot® Sport EV race tires. The tires, with their street-inspired tread pattern, can run in wet or dry conditions in the urban environments where the races occur.

"This is a historic moment in the evolution of the automobile," says Oscar Pereda, Director of Michelin North America's Ultra High Performance Tires. "In the spring of 1899 an electric car, on MICHELIN® tires, set a world speed record by being the first road vehicle to go over 100 kilometers per hour. Today, on the doorstep of spring, 116 years later, we repeat that history with the North American debut of the world's first fully electric racing series."

Such a new form of motorsport has noble ambitions: to evolve the sport to be more sustainable and continually push the boundaries of automotive technology. And for Michelin, this type of innovation and forward thinking can be seen through its 125-year history. Michelin was the first to use pneumatic tires in racing and the first to radialize racing, and it is now in partnership with Formula E to electrify racing.

This explains why Michelin reengineered the tire design for Formula E in order to work with the fast-revving electric motors, and provide low rolling resistance for energy efficiency and a versatile tread pattern that allows the drivers to race in either wet or dry conditions. Formula E is a rolling laboratory for Michelin to develop and test new technologies that translate into tires for consumer vehicles. With less of a motor roar, spectators can hear the tires in the braking zones, gripping through the corners and chirping under acceleration out of the corners onto the straights.

There's a new soundtrack. A new race-day feeling. A new future for the sport. "This makes everything more exciting!" emphasizes Chris.



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by Aaron Robinson

 CASUAL CAR SHOWS CAN'T GET BY WITHOUT GOVERNANCE.



One of the downsides of getting older is an inability to stay up late. Which goes hand in glove with a corresponding imperative to wake up at 5:30 a.m., when there's nothing to do but lie in bed obsessing over stuff that you can't do anything about at 5:30 a.m. However, in Los Angeles, thanks to some people whose enthusiasm for cars shames us all, there is something to do before dawn on the weekend besides try to recall all the X-rays you've ever had and wonder if they'll cause cancer. Saturday and Sunday mornings are for the disorganized car show.

This is a ritualistic gathering of local car people at some parking lot in the vast suburban sprawl, where for a couple of hours there is chatting, tire kicking, and coffee consumption.

It can start even earlier than 5, but it's usually over by 9 a.m., when friends and colleagues and that neighbor who you never realized owns a Hudson Hornet all disappear back into the city's bloodstream for another week. Thanks in part to the internet popularity of Cars and Coffee and Supercar Sunday, as L.A.'s two best-known events are called (plus the appeal of the concept, which is that nobody registers or pays

money or cares if you even come), knockoffs have sprouted across L.A., across America, and even in places that aren't America. I once went to one in King Rama V Square in Bangkok, where car and bike nuts gravitate on Saturday nights. My wife and I were the only things of American origin until a '59 Olds Eighty-Eight cruised in, did one imperious lap of the statue of Chulalongkorn the Great astride his horse, and then harrumphed up to the curb like Douglas MacArthur wading ashore in the Philippines.

I call it disorganized, but that's not true, because anywhere car guys go in numbers, there must be organization. Somebody has to clear it with whoever owns the venue. Somebody has to direct traffic. Somebody has to clean up the trash and the coolant puke. Somebody has to pick weekly themes and run the website. Libertarians will no doubt wonder why an activity as simple as a once-a-week congregation of a couple hundred cars requires government, but groups need to be gov-



► **The eclectic, informal car meet still needs organization.**

erned and car people are no exception. Horsepower has always been a jerk magnet, and where one buffoon goes, winding it up through open headers as the sun rises over nearby homes or attempting drift mastery on a public street, others will follow. Somebody has to be the police, up to and including calling the actual police when necessary. They don't want to, but they must in order to preserve the event.

Retired West Coast Ford PR man John Clinard was that somebody for the 410 Saturdays from 2006 to 2014 that Cars and

Coffee took place in an Irvine, California, parking lot. Clinard and Ford designer Freeman Thomas decided to host the event at Ford's old West Coast headquarters when a previous gathering was finally booted from a coastal shopping mall. The night before, Clinard and his wife, Linda, and a small crew of volunteers would put out the trash cans, street signs, and cones. Then they would return at 5:30 a.m. to set up the coffee-concession tables, begin directing traffic, greet old friends, and get yelled at by goons who refuse to accept that all parking lots have a finite capacity.

They would typically stay until 11 a.m., long after most of the cars had vamoosed. I figure John and Linda have each invested 2255 hours of their lives—56 standard workweeks—to giving car enthusiasts and their cars a place to go on a Saturday. Why? "I love it," Clinard told me. "I never tire of cars and car people. I'm always the last one to leave an event, can't get enough. Fortunately, Linda shares that feeling." Sadly, Cars and Coffee called it quits at its most recent location last December, the sheer size (550 to 650 cars, 2000 to 3000 people) and resulting hubbub having once again outgrown its venue. Thus far another home has not been found.

If anybody volunteered more effort into ensuring that other people can show off their sheetmetal, it can only be Dustin Troyan, the founder of Supercar Sunday. The event, now in its 14th year, is slightly

different, in that Troyan leases a mall lot in Woodland Hills, north of L.A., and recovers the cost by selling vendor space. But the experience for attendees is basically the same: rise early, drive, caffeinate, kibitz, leave. Like Cars and Coffee, Supercar Sunday became a traveling circus when it was ejected from a previous location due to rampant success clashing with limited parking. And last year, Troyan circulated a video pleading with attendees to follow some simple rules of common courtesy.

"There have to be rules," Troyan emailed me. "It has to be organized. Otherwise it will simply not work. A car show is a privilege, not a right. It takes a tremendous amount of work and dedication to put on these events on a weekly basis." Despite 14 years of effort, of placating landlords and neighbors and cops, the rewards have been well worth it, he says. "The car world is our society, it is who we are."

Does all that change your definition of a car enthusiast? It does mine. ■

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by Ezra Dyer

POLESTAR, PAUL NEWMAN, AND THE RISE OF THE SWEDISH SLEEPER.



Back in college, I got the idea that I wanted a V-8-powered Volvo 240. The V-8 Volvo is synonymous with Ross Converse, a mad genius whose brochure included a photo of a diesel-badged 240 doing a righteous burnout. I loved the notion of a sleeper 240 packing a Mustang 302, so I arranged a visit with Converse at his house in Portland, Maine. I was hoping he'd have a completed car that I could check out, and he did. But it wasn't quite the ratty 240 that I might plausibly afford. There in his driveway was a brand-new 960 wagon that looked stock except for aftermarket wheels and a big exhaust tip. "This is a clone to the cars I did for David Letterman and Paul Newman," he said. "Want me to fire it up?" A better question might've been, "Want me to ruin your expectations for years

to come?" I have a weakness for vehicles with the wrong engines—at the time, my most recent car was a 1979 BMW 323i that had a 3.0-liter Bavarian six crammed under the hood—and the Newman-spec wagon was as wonderfully wrong as it gets.

That 960 had a supercharged 302 and a Tremec five-speed manual. It was about the coolest thing I'd ever seen—the barbaric gurgle of a cammed-up Fox-body Mustang V-8 emanating from an anonymous late-model Swedish family car. As Newman told Letterman, in this car, "from 20 to a hundred you can chew anybody's ass."

I didn't end up with a Converse Volvo because the project seemed too daunting, too expensive for a broke college student. You had to find a wrecked 5.0 Mustang (plenty of those) plus a non-rusty Volvo 240 (in Maine: rare as a blue lobster), then get Converse's conversion kit and have him put it all together. Ultimately, if you wanted a freaky-quick Swedish car, it was easier to just get a Saab 9000 Turbo. Which is what I eventually did. But the pining for a sleeper Volvo never went away, as evidenced by my unreasonable infatuation with the 2015 S60 Polestar.

Granted, the car that I drove—number 38 out of 40 for the U.S. market—wasn't painted in the most subtle color, the bodywork sprayed with a shade of blue somewhere between windshield-washer fluid and the hue of a calving iceberg. Polestar's press manager referred to it as "Swedish racing green." But other than that, the Polestar looks much like any other S60, handsome but familiar. This body's been around long enough that when I looked under the hood, I saw "FoMoCo" stamped on the strut tower.

The Polestar doesn't drive like anything conceived during the Ford days, though. The 345-hp straight-six rips you back in the seat while the intake and exhaust harmonize in a way that recalls a 911 Turbo—no Auto-Tuned remix playing through the stereo. This thing's so analog that if you want to adjust the Öhlins dampers, you crawl under the car

(front) and remove trim in the trunk (rear). The Polestar supplement to the owner's manual shows you how to do it.

The Haldex four-wheel-drive system puts the power down, too. This magazine recorded a zero-to-60 of 4.5 seconds, quick enough to get the drop on many a Bimmer. I loved it, and I promptly recommended the V60 version to a friend who's looking for a four-wheel-drive wagon. He called the dealer and began formulating a potential strategy for convincing his wife that a \$62,000 tuner Volvo makes more sense than an Audi Allroad.

Well, the thing is, it doesn't, any more than it makes sense to gut a perfectly good 960 and stuff it full of V-8 crate engine. But the coolest cars are often the ones that defy rationality. And these days even the mainstream Volvos are getting real weird with it, in the best possible way.

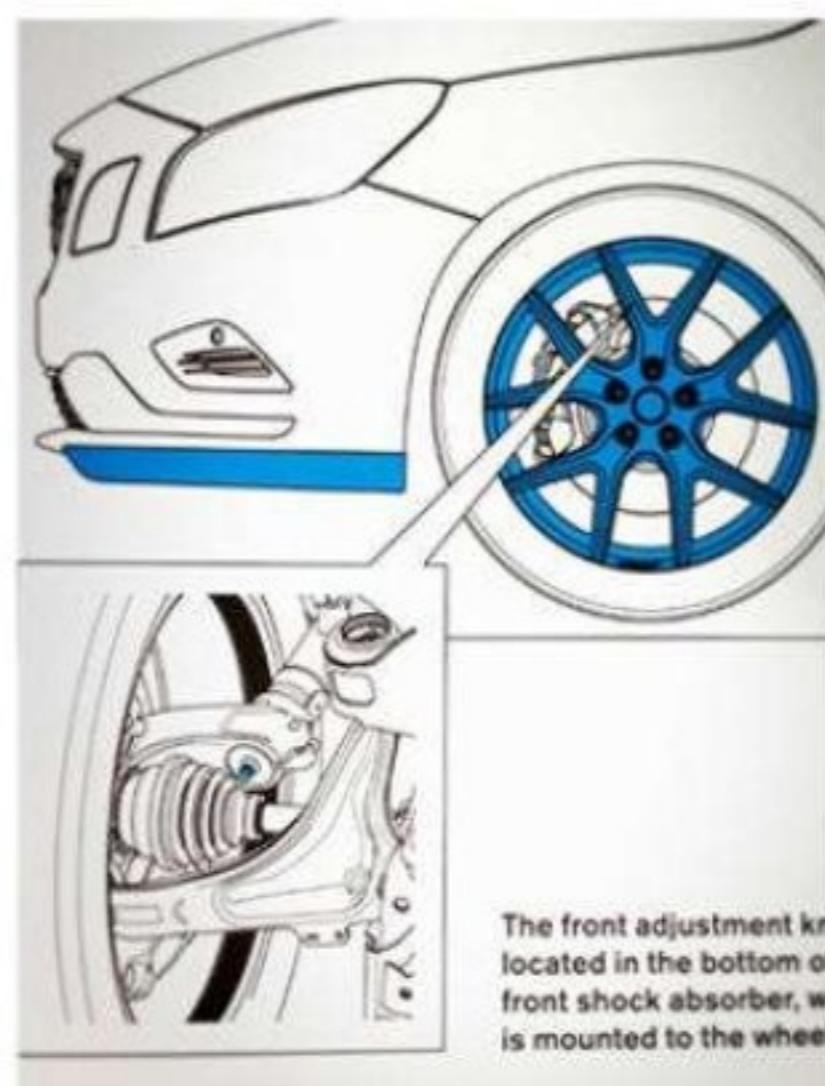
I'll admit that when the Chinese bought Volvo, I got worried that we were heading for the same sort of undercapitalized fade to mediocrity that GM inflicted on Saab. When I didn't hear anything from Volvo for a few years, I figured Geely was busy pillaging Volvo's intellectual property so it could figure out how to build a car that doesn't look like a sketch from *The Simpsons*. But then last year, Volvo abruptly revealed that

they'd been in the lab with a pen and a pad, drawing up a four-banger with supercharging and turbocharging. And a plug-in, 400-hp XC90 T8 [see page 106]. And a pilot program for fully autonomous cars to run around Gothenburg. It may turn out that Geely is a cooler boss than Ford ever was.

Last fall, I met with a bunch of Volvo executives at the Los Angeles auto show. By way of stating Volvo's grand ambitions, one of these rangy Vikings declared, "We're the fastest-growing luxury brand on every continent but one." He let that sink in for a second, until I blurted, "Look out, Australia!" That meeting ended

shortly thereafter. So I slunk over to the XC90 display, where an engineer told me that the hybrid will do a four-wheel-drive burnout off the line. At that moment, the hybrid XC90 immediately jumped to the top of the list for my next family vehicle.

A car like that, a handsome Volvo crossover, won't attract much attention. But I'll bet that from 20 to a hundred, it'll chew anyone's ass. ■



The front adjustment knob is located in the bottom of the front shock absorber, which is mounted to the wheel.

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FINALLY ARMED WITH THE POWER
TO MATCH ITS CHASSIS, CADILLAC'S
COUPE SHINES IN TEXAS HILL COUNTRY.

BY ERIC TINGWALL

L O N E



PHOTOGRAPHY BY MARC URBANO

2016 CADILLAC ATS-V COUPE

★

S T A R



The eccentric tenor of Austin, Texas, goes so far beyond the stereotypes that it could pass for parody. In the city's South Congress neighborhood, for example, you get your kale juice, fried chicken, and breakfast tacos not from a food truck, but from food Airstreams and food shipping containers. The local thrift shop shares a wall with American Apparel, and everybody pretends not to notice that the hipster counterculture is funded by Range Rover drivers quaffing \$20 cocktails.

The off-kilter atmosphere is so pervasive here that it's normal. What is truly strange in Austin is brash, unashamed indulgence and capitalism without the pretense of keeping Austin weird. Like a \$63,660 sports coupe from a brand so tragically unhip that it's relocating people to New York City with the hope that speeding taxis will splash them with trendiness and relevance.

If you place more stock in what's good than what's trending, though, you need to know about the 2016 Cadillac ATS-V, a 464-hp BMW challenger that finally captures what Cadillac has chased for 13 years with varying success. With the ATS-V coupe and sedan, Cadillac has mastered the complete package of performance, style, and driving bliss. To arrive at that conclusion, we pointed the ATS-V coupe into the heart of Texas Hill Country, 180 miles southwest of the state capital by way of Sabinal, population 1695, where



INSTANTANEOUS TURN-IN, BALANCED CORNERING, AND PALPABLE STEERING ARE VIRTUES OF THE CAR, NOT THE ELECTRONICS.



we missed the annual Wild Hog Festival and Craft Fair by just one day. The billboard showing a grown man midflight as he's bucked from a hirsute swine was a reminder that the truly weird parts of Texas exist well outside of city limits.

You arrive in Hill Country by roads both flat and fast. There's a freeway with an 85-mph posted limit, plus 75-mph two-lanes with curves that could roll a pickup doing legal speeds. Other bends are so long and gentle that we safely blasted through at triple-digit velocities. The main attraction is a network of tighter bends and roller-coaster undulations carved by the state of Texas into the limestone-and-granite moonscape. You have to work to find a boring road here, though there are few more fun than routes 335, 336, and 337, cunningly branded so that local gas stations can sell T-shirts declaring "I rode the Three Sisters."

The ATS-V is the product of a small team with speed encoded in its members' genes. On weekends, you can find several development engineers racing third- and fourth-generation Chevrolet Camaros against each other in local SCCA competition. Chief engineer Tony Roma previously served as program manager for the Camaro ZL1. It's no surprise then that the ATS-V borrows a handful of tricks (and parts) from GM's Corvette and Camaro speed shops, including an electronically controlled limited-slip differential, magnetorheological dampers, and the Performance Traction Management system.

Tour, sport, and track modes massage steering calibration, throttle mapping, and damper behavior. There are more settings for the stability control than there are cylinders in the engine. Launch control, no-lift shift, and rev-matching logic give the six-speed manual a fighting chance against flappy paddles with shift times measured in milliseconds.

For all the computer-controlled possibilities, though, the ATS-V makes a single impression no matter the settings. Instantaneous turn-in, balanced cornering, and palpable steering feel are virtues of the car, not the electronics. Here, the performance aids only enhance the inherent goodness of the car rather than compensate for bad behavior as many "torque vectoring" systems do. Where most automakers speed up throttle tip-in to fake the feeling of a quicker car in sport mode, Cadillac slows the throttle progression in the track setting to make modulation easier. Thanks to the Magnetic Ride Control dampers that adjust quicker and with more bandwidth than traditional adaptive shocks, a single compression and rebound quells every body movement.



CADILLAC ATS-V COUPE



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- ✚ PUT ON MORE THAN A FEW POUNDS DURING STRENGTH TRAINING.
- ✚ CADILLAC'S LONGTIME ASPIRATIONS ACHIEVED.

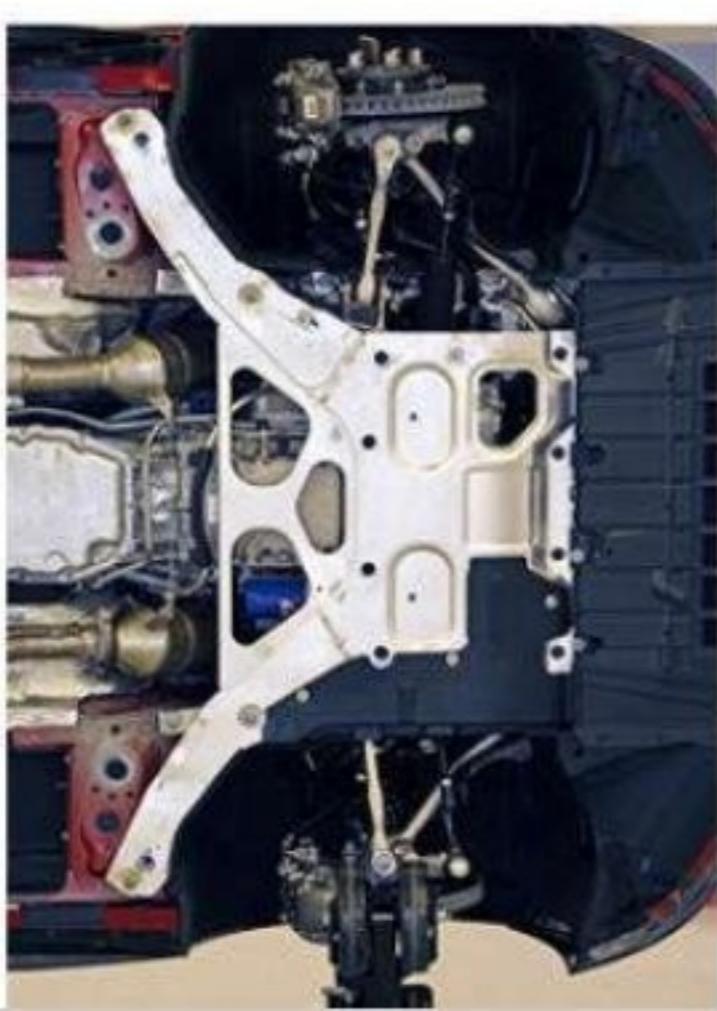
Hill Country's world-class topography is compromised by third-world pavement best described as coarse gravel suspended in a tar adhesive. These roads don't support the 0.97 g of grip we measured on the skidpad, though you can still marvel at the obedient chassis, the gentle breakaway, and the easy catch of slides at the lowered limits of the road. PTM's third-most aggressive mode (of five total settings) is the perfect safety net, leaving you just enough rope to tie a noose, but not so much that you can hang yourself.

On roads this coarse in a car this connected, you feel the texture of the surface change in your hands at the same moment

your ears register a pitch shift in the thrum of the tires. In small wiggles and twitches, the steering wheel telegraphs the groove where an overloaded truck creased the pavement and the bulge where the earth has never stopped settling.

ZF supplies Cadillac with the same variable-ratio electric-power-steering system found in BMW's compact sports coupe, a fact Cadillac engineers only discovered as they dissected an M4 in GM's Warren, Michigan, tech center. Even if it isn't intentional, it's more than a coincidence. The last Mercedes that Cadillac purchased for benchmarking purposes was the supercharged E55 AMG built between 2002 and 2006, and no one at Cadillac mentions the Audi RS5 or the Lexus RC F without prompting. The American underdogs aren't afraid to advertise where they set their sights. "We chose one car to bludgeon, performance-wise," Roma says of the M3/M4.

So how does Cadillac conjure more steering feel than BMW using the same system? To compensate for the additional lateral stresses transmitted by the Michelin Pilot Super Sport tires, engineers stiffened the structure that was originally optimized



★ STIFFER AND SPEEDIER
A large aluminum shear plate ties the front subframe to the body structure for increased rigidity. The twin-turbocharged LF4 engine keeps plumbing runs short with liquid-to-air intercoolers straddling the throttle body and exhaust manifolds integrated into the cylinder heads.



for weight savings in the base ATS. An aluminum shear plate now connects the front subframe to the body structure, and a pair of diagonal braces ties that cradle to the front longitudinal members. Spherical bearings replace six bushings in the lateral suspension links to enhance wheel location.

Unfortunately, these reinforcements also mean that the Alpha platform's weight advantage evaporates in V spec. At 3760 pounds, our test car weighed in 204 pounds heavier than the comparable M4, though you wouldn't know it without driving onto the scales. The ATS-V maneuvers as if it's the lighter, smaller machine.

Most of this is not exactly news. We've heaped praise on the Alpha platform and Cadillac's chassis tuning in each of the ATS's comparison-test appearances. The ATS-V amplifies the desirable traits we've called out: higher grip, improved steering fidelity, and sharper reactions. The difference is that the V marks the first time that the smallest Cadillac packs an engine to match its moves. Roma readily admits that a small-block V-8 fits under the hood, perhaps with less effort than was required to install the taller LF4 twin-turbo V-6. But with a new, 640-hp CTS-V just months away, Cadillac wanted distinct character and pricing to differentiate the V-series models.

The 3.6-liter V-6 minimizes turbocharger plumbing runs with exhaust manifolds integrated into the heads and liquid-to-air intercoolers perched on top of the engine. Titanium-aluminide turbine wheels cut the inertia inside the turbochargers by 51 percent while the optional eight-speed automatic uses a torque converter that locks up slower than in the Corvette to mask any whiff of turbo lag.

In an age where boosted engines typically churn out max grunt below 2000 rpm, the torque peak at 3500 rpm sounds suspiciously high. But the net effect is one of linearity rather than lag. The transition from rising boost to the 445-lb-ft plateau is

→ V-specific gauges are an improvement that leaves room for improvement. Optional Recaro seats grip as well as the Michelin tires.

less abrupt than in most turbo engines, and the revs climb as if delivered by a torque-rich, naturally aspirated engine rather than a boosted powerplant.

At the test track, the ATS-V launches like a cat out of a bathtub, clocking 4.2 seconds to 60 mph and 12.6 seconds through the quarter-mile. The automatic should do the run even quicker, though we wouldn't trade the satisfaction of the Tremec's short, firm throws for those tenths.

Front brakes pilfered from the outgoing CTS-V make easy work of slowing a car that weighs in 500 pounds lighter. The stopping distance from 70 mph measures just 154 feet. There are no optional carbon-ceramic brakes or upsized wheel packages. Only the Track package with a larger carbon-fiber front splitter and taller rear spoiler influences performance. The added aero bits increase downforce at speed while dropping Vmax from 189 mph to about 185.



The ATS-V's few blatant flaws are squelched away inside the cabin. The V-specific instrument cluster is more legible than the regular ATS's, though it hardly looks upscale. The V treatment doesn't address the ATS's tight rear seat or the maddening CUE infotainment system that becomes even more difficult to use when combined with a firmer ride and higher speeds.

From the snug hold of the optional Recaros, it's easy to excuse these missteps. The ATS-V marks the culmination of Cadillac's concerted efforts to redefine the brand as a leader in driving dynamics and performance. Amid an increasingly competent product range, the ATS-V still stands out as the one astonishing success that manages to pull the whole enterprise together. From a brand that has been closing in on excellence for years, the ATS-V shines as the single star that can guide the rest of the lineup. At least until the CTS-V arrives. ■



NOTABLE HIGHLIGHTS

Lightweight titanium connecting rods and titanium-aluminide turbine wheels improve engine response. Rev-matching downshifts, no-lift upshifts, and launch control are provided with the manual transmission.

2016 CADILLAC ATS-V

039

SPECIFICATIONS

PRICE

AS TESTED	\$74,450
BASE	\$63,660

VEHICLE TYPE: front-engine, rear-wheel-drive, 4-passenger, 2-door coupe

OPTIONS: Track Performance package, \$6195; Recaro seats, \$2300; 18-inch polished wheels, \$900; red brake calipers, \$595; Phantom Gray metallic paint, \$495; Protection package, \$305

STANDARD: power windows, seats, and locks; remote locking; cruise control; tilting and telescoping steering wheel

AUDIO SYSTEM: satellite radio; minijack, USB, media-card, and Bluetooth-audio inputs; 10 speakers

ENGINE

twin-turbocharged and intercooled V-6, aluminum block and heads

BORE X STROKE ... 3.70 x 3.37 in, 94.0 x 85.6 mm

DISPLACEMENT 217 cu in, 3564 cc

COMPRESSION RATIO 10.2:1

FUEL DELIVERY SYSTEM direct injection

TURBOCHARGERS Mitsubishi TD04

MAXIMUM BOOST PRESSURE 18 psi

VALVE GEAR double overhead cams, 4 valves per cylinder, hydraulic lifters, variable intake- and exhaust-valve timing

REDLINE/FUEL CUTOFF 6500/6500 rpm

POWER 464 hp @ 5850 rpm

TORQUE 445 lb-ft @ 3500 rpm

DRIVETRAIN

TRANSMISSION 6-speed manual

FINAL-DRIVE RATIO 3.73:1, limited slip

MPH PER GEAR 1000 RPM IN GEAR (rpm)

1 3.01 7.5 49 mph (6500)

2 2.07 11.1 72 mph (6500)

3 1.43 15.2 99 mph (6500)

4 1.00 16.3 106 mph (6500)

5 0.84 22.9 149 mph (6500)

6 0.57 31.3 185 mph (5900)

CHASSIS

unit construction with a rubber-isolated rear subframe

BODY MATERIAL: steel and aluminum stampings

STEERING: rack-and-pinion with variable ratio and variable electric power assist

RATIO 15.5-11.1:1

TURNS LOCK-TO-LOCK 2.4

TURNING CIRCLE CURB-TO-CURB 38.4 ft

SUSPENSION

F: ind, strut located by 1 diagonal and 1 lateral link, coil springs, 3-position cockpit-adjustable electronically controlled magnetorheological dampers, anti-roll bar

R: ind; 2 diagonal links, 2 lateral links, and a toe-control link per side; coil springs; 3-position cockpit-adjustable electronically controlled magnetorheological dampers; anti-roll bar

BRAKES

F: 14.5 x 1.3-in vented disc

R: 13.3 x 1.0-in vented disc

STABILITY CONTROL fully defeatable, traction off, competition mode, launch control

WHEELS AND TIRES

WHEEL SIZE/CONSTRUCTION

F: 9.0 x 18 in R: 9.5 x 18 in/cast aluminum

TIRES Michelin Pilot Super Sport

F: 255/35ZR-18 (94Y) R: 275/35ZR-18 (99Y)

EXTERIOR DIMENSIONS

WHEELBASE	109.3 in
LENGTH	184.7 in
WIDTH	72.5 in
HEIGHT	54.5 in
FRONT TRACK	60.5 in
REAR TRACK	61.4 in
GROUND CLEARANCE	4.9 in

INTERIOR DIMENSIONS

SAE VOLUME	F: 50 cu ft R: 34 cu ft
TRUNK	10 cu ft

COMPETITORS

AUDI RS5 (4.2-L V-8, 450 HP, 7-SP AUTO)

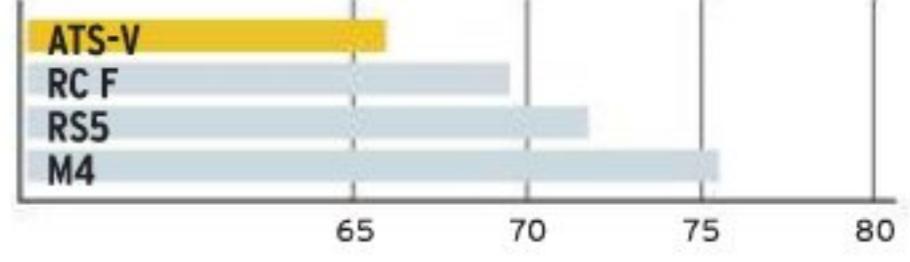
BMW M4 (3.0-L I-6, 425 HP, 6-SP MAN)

CADILLAC ATS-V (3.6-L V-6, 464 HP, 6-SP MAN)

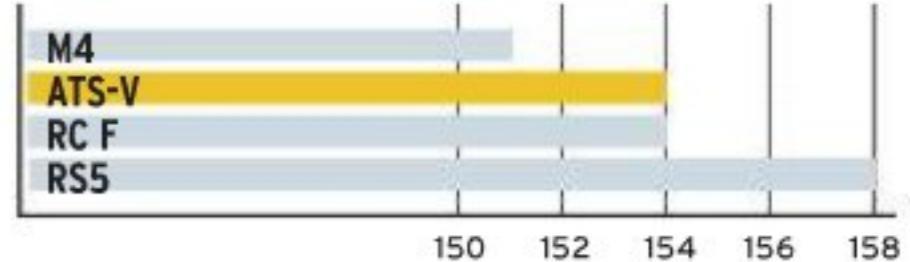
LEXUS RC F (5.0-L V-8, 467 HP, 8-SP AUTO)

CURRENT BASE PRICE dollars x 1000

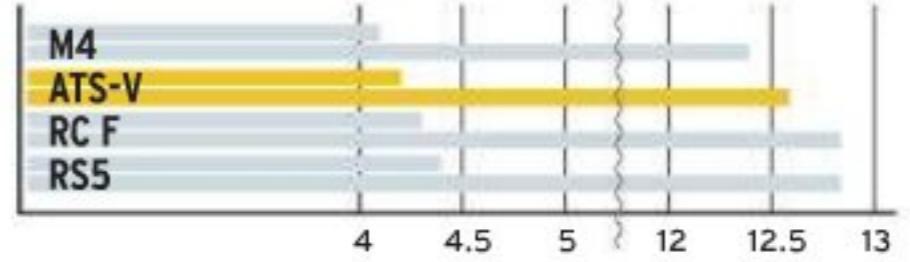
Base price includes performance options.



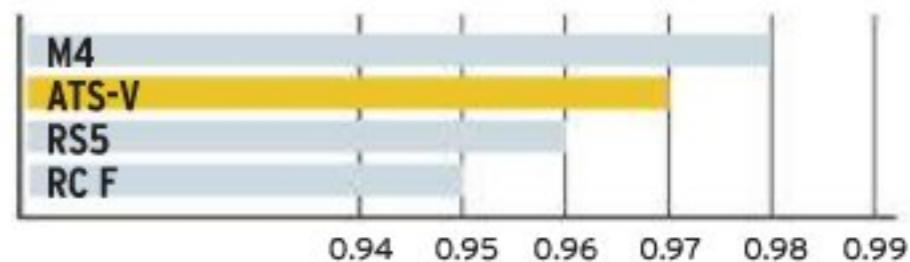
70-0 BRAKING feet



ACCELERATION 0-60 & 1/4-mile, seconds



ROADHOLDING 200- or 300-foot skidpad, g



The Official Fuel of CAR AND DRIVER

CAR AND DRIVER TEST RESULTS

ACCELERATION

	SECONDS
ZERO TO 30 MPH	1.8
40 MPH	2.4
50 MPH	3.4
60 MPH	4.2
70 MPH	5.4
80 MPH	6.7
90 MPH	8.0
100 MPH	9.9
110 MPH	11.7
120 MPH	13.7
ROLLING START, 5-60 MPH	5.3
TOP GEAR, 30-50 MPH	9.6
TOP GEAR, 50-70 MPH	6.9
1/4-MILE	12.6 sec @ 115 mph
TOP SPEED (DRAG LTD, MFR'S CLAIM)	185 mph

TEST NOTES: Performance Traction Management's launch control returned consistent 4.5-second runs to 60 mph. We beat the computers by launching from 3500 rpm and modulating the throttle until the tires hooked up.

FUEL

CAPACITY	16.0 gal
OCTANE	91 recommended
EPA CITY/HWY	16/24 mpg*
C/D OBSERVED	20 mpg

INTERIOR SOUND LEVEL

IDLE	50 dBA
FULL THROTTLE	84 dBA
70-MPH CRUISING	69 dBA

BRAKING, 70-TO-ZERO MPH

FIRST STOP	158 ft
SHORTEST STOP	154 ft
LONGEST STOP	164 ft
FADE RATING	NONE

TEST NOTES: The longest stop of 164 feet was an anomaly resulting from gravel on the surface. The five other stops fell within a five-foot spread with no evidence of fade. Pedal feel is excellent.

HANDLING

ROADHOLDING, 300-FT-DIA SKIDPAD 0.97 g

UNDERSTEER MODERATE

TEST NOTES: We drove both ATS-V sedans and coupes on Austin's Circuit of the Americas and noticed that the sedan is a bit more neutral, perhaps owing to its narrower rear track. On the skidpad, the coupe is very stable, requiring deliberate inputs to unsettle the rear.

WEIGHT

CURB	3760 lb
PER HORSEPOWER	8.1 lb
DISTRIBUTION	F: 52.7% R: 47.3%
TOWING CAPACITY	0 lb

tested by ERIC TINGWALL
in Uvalde, Texas



CHEVROLET MALIBU

INGENUITY & INNOVATION

Chevrolet Malibu takes technology to a new level throughout the vehicle, packing a one-two punch of sophisticated power and suspension technology with connectivity and fuel efficiency. That's the kind of innovation you can depend on from Chevrolet.

2.5L Engine

INTELLIGENT STOP/START TECHNOLOGY

Under certain conditions, the engine turns off at a stop and seamlessly starts again as soon as you lift your foot off the brake. The intelligent stop/start technology – along with other advancements such as Direct Injection and Variable Valve Timing – can increase city mileage by more than 10 percent for an EPA-estimated 25 MPG city. The stop/start technology uses a reinforced Absorbent Glass Mat (AGM) starting battery. There's a beefed-up tandem-solenoid starter motor and even an auxiliary battery located in the rear of the car – plus an electric hydraulic pump keeps fluid circulating through the transmission to make sure it's always pressurized and primed.



ENGINE ENGAGED

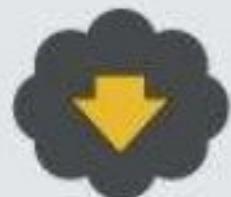
As soon as the brake is released, the engine engages, virtually in an instant.



2.0L Turbo & 2.5L Engine

COOLER, CLEANER, QUICKER

Direct Injection helps reduce cold-start emissions and allows for a higher compression ratio. Direct Injection helps cool the overall intake process, allowing for higher boost from the ECOTEC® 2.0-liter engine's turbocharger.



COLD-START EMISSIONS

FOR MORE INFORMATION ON THE MALIBU,
GO TO CHEVROLET.COM/MALIBU

FIND NEW ROADS™

2.5L Engine SEAMLESS OPERATION

Intake Valve Lift Control technology enables variable intake valve lift, duration and timing over a wide range of engine operation. "Intake Valve Lift Control works so seamlessly, drivers aren't likely to notice it at all," said Mike Katerberg, Chevrolet global chief engineer for ECOTEC engines. "What they will notice is a fuel savings of up to one mile per gallon, offering an EPA-estimated 25 city/36 highway."

25 **36**
MPG CITY MPG HWY

Intelligent stop/start technology, Intake Valve Lift Control and a 6T45 transmission all contribute to the 2.5-liter's EPA-estimated fuel economy.

4G LTE Wi-Fi¹ GET CONNECTED

The available built-in 4G LTE Wi-Fi¹ offers a better experience than your smartphone and the ability to connect up to seven devices at once. So you can stream your music playlist while your passengers stream their favorite games or movies – keeping everyone happy.

2.0L Turbo PERFECTED POWER

In an engine's combustion cycle, timing is everything. The available ECOTEC 2.0-liter turbocharged engine has nitrided intake valves. The sodium-filled stems of the exhaust valves enhance heat transfer, maintaining a lower, more uniform valve temperature, reducing valve guide wear and improving valve seat wear.



2.0L Turbo POWER BOOSTER

The available turbocharged ECOTEC 2.0-liter, like the 2.5-liter engine, also has double overhead camshafts and Continuously Variable Valve Timing. The 2.0-liter has a turbocharger that helps generate 259 horsepower and a best-in-class 295 lb.-ft. of torque that's available at engine speeds as low as 3000 rpm.



Malibu 2.0L	295 torque
Audi A6 2.0L	258 torque
BMW 528i	260 torque
Porsche Cayman	213 torque

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When you set out to Find New Roads, you build a car that ranks highest in long-term dependability by J.D. Power.

We are proud to add this to our growing list of awards. Chevrolet is the most awarded car company over the last year.³

CHEVROLET



**JAGUAR F-TYPE R COUPE**

PRICE > \$110,845
POWER > 550 hp
TORQUE > 502 lb-ft
WEIGHT > 4088 lb
C/D OBSERVED MPG > 11

PORSCHE 911 CARRERA GTS

PRICE > \$138,750
POWER > 430 hp
TORQUE > 325 lb-ft
WEIGHT > 3276 lb
C/D OBSERVED MPG > 13

THE IMITATION GAME

If it's the sincerest form of flattery, then the Porsche 911 ought to feel honored.

by Mike Duff
photography by James Lipman



MERCEDES- AMG GT S

PRICE > \$151,075
POWER > 503 hp
TORQUE > 479 lb-ft
WEIGHT > 3677 lb
C/D OBSERVED MPG > 11

Hor the last five decades, the toughest question for any buyer of a high-end sports car has been: "How do I not end up with a 911?" To describe Porsche's most famous product as a default choice is a faint-praise damning of what has become the world's most iconic sports car. But it's also an acknowledgment that to get a car as capable and well-rounded as a 911, you have to get, well, a 911.

There have been many challengers, of course, including one made by Porsche itself (the 928). But despite what every boxing movie has assured us about plucky underdogs, none have suc-

ceeded in wholly unseating this champ, certainly not in the hearts of the people who actually write checks for real cars. It's a point proven by a trawl around the paddock of any upmarket track day or the parking lot of any plastic surgeon's clinic.

Only now, for the first time, the 911 faces a direct challenge from Stuttgart's other native carmaker. Having failed to set the supercar world alight with the gullwing SLS, Mercedes-Benz has opted to move down a segment with the AMG-engineered GT, a car that targets the 911 with almost stalkerlike intensity. The range-topping GT S we're testing here has the most powerful version of AMG's new 4.0-liter twin-turbocharged V-8—503 horsepower—and it carries a base price of \$130,825, which buys what is, by the some-



times stingy a la carte standards of the segment, a rather generous list of amenities.

All of which limits our choice of 911. The 520-hp 911 Turbo is closest in terms of pure oomph, but it is about \$20,000 more expensive before you've ticked a single option box. The Carrera GTS is \$15,000 cheaper than the AMG GT S, but well down on power. Knowing that even a moderate options workout would push the Porsche beyond price parity with the Mercedes-AMG, that's the version we picked. Despite its name, the GTS is more of a Carrera S-plus than a junior GT3, bringing the fractionally wider Carrera 4 bodyshell and the drive-sharpening Sport Chrono kit and PASM adaptive suspension, plus a 30-hp increase in output to 430.



That brings us to the odd one out, because it's not German and not rear-wheel drive—but it's still the next-closest thing to a 911. Despite being on sale for less than a year, the Jaguar F-type R coupe has just received a four-wheel-drive system that will, henceforth, be standard on all U.S. versions. In this company, it's a performance bargain, with a 550-hp version of Jaguar's supercharged V-8 and a \$104,595 base price. And when we requested a representative U.S.-spec car in Germany, Jaguar went to the considerable trouble of shipping this one straight from the factory, complete with Yankee-red rear turn signals and a navigation unit that reckoned we were 4000 miles from the nearest road.

After gathering performance figures on the runway of the Adolf Würth Airport, our chosen driving location is the Black Forest, about an hour west of Stuttgart and home to most of Germany's spa towns, from Baden-Baden to Bad Herrenalb and even Bad Wildbad, which is so Bad it has to be good. The region is also known for its eponymous kirsch-soaked cake that, by trying really hard, we managed to avoid. A home-field advantage to the Germans then, although some of the mountain roads around here would be considered driving nirvana wherever they were situated. Let the battle rage.

3. JAGUAR F-TYPE R COUPE

There's a lot to like about the F-type R coupe, but it finishes a distant third here, coming across the line whole seconds after the flash that barely separates the Porsche from the Mercedes.

Next to its Teutonic rivals, the Jaguar feels unpolished and slightly ill-mannered. It's never less than exciting, including when you don't want it to be. The suspension firmness is punishing on anything other than glass-smooth surfaces, refinement is lacking, and the cabin so tight that it's more worn as a sarong than sat in. But the R's party piece comes when you lift off the throttle in dynamic mode. You're greeted by a fusillade of pops and bangs that sounds as if you're driving past a drunken firing squad. It's practically guaranteed to get you a snotty letter from the local resident association, if not from neighbors one town over.

The Jag's four-wheel-drive system is of

VEHICLE	2016 JAGUAR F-TYPE R COUPE	2016 MERCEDES-AMG GT S	PORSCHE 911 CARRERA GTS
BASE PRICE	\$104,595	\$130,825	\$115,195
PRICE AS TESTED	\$110,845	\$151,075	\$138,750
DIMENSIONS			
LENGTH	176.0 inches	179.0 inches	177.5 inches
WIDTH	75.7 inches	76.3 inches	72.9 inches
HEIGHT	51.6 inches	50.7 inches	51.0 inches
WHEELBASE	103.2 inches	103.5 inches	96.5 inches
FRONT TRACK	62.4 inches	66.1 inches	60.6 inches
REAR TRACK	64.1 inches	65.0 inches	61.4 inches
INTERIOR VOLUME	F: 52 cubic feet	F: 55 cubic feet*	F: 50 cubic feet R: 17 cubic feet* 14 cubic feet
CARGO	11 cubic feet	12 cubic feet	
POWERTRAIN			
ENGINE	supercharged DOHC 32-valve V-8 305 cu in (5000 cc)	twin-turbocharged DOHC 32-valve V-8 243 cu in (3982 cc)	DOHC 24-valve flat-6 232 cu in (3800 cc)
POWER HP @ RPM	550 @ 6500	503 @ 6500	430 @ 7500
TORQUE LB-FT @ RPM	502 @ 3500	479 @ 1750	325 @ 5750
REDLINE/FUEL CUTOFF	6600/6600 rpm	7000/7000 rpm	7600/7900 rpm
LB PER HP	7.4	7.3	7.6
DRIVELINE			
TRANSMISSION	8-speed automatic	7-speed dual-clutch automatic	7-speed dual-clutch automatic
DRIVEN WHEELS	all	rear	rear
GEAR RATIO:1/ MPH PER 1000 RPM/ MAX MPH	1 4.71/6.6/44 2 3.14/10.0/66 3 2.11/14.6/96 4 1.67/18.3/120 5 1.29/23.7/156 6 1.00/30.0/186 7 0.83/36.0/186 8 0.67/46.0/186	1 3.40/6.3/44 2 2.19/9.9/70 3 1.63/13.2/93 4 1.29/16.7/117 5 1.03/20.5/144 6 0.84/26.3/184 7 0.63/34.2/193	1 3.91/5.9/47 2 2.29/10.1/80 3 1.65/13.9/110 4 1.30/17.7/140 5 1.08/21.5/170 6 0.88/26.0/189 7 0.62/48.5/175
AXLE RATIO:1	2.56	3.67	3.44
CHASSIS			
SUSPENSION	F: multilink, coil springs, anti-roll bar R: control arms, coil springs, anti-roll bar	F: control arms, coil springs, anti-roll bar R: control arms, coil springs, anti-roll bar	F: struts, coil springs, anti-roll bar R: multilink, coil springs, anti-roll bar
BRAKES	F: 15.0-inch vented disc R: 14.8-inch vented disc	F: 15.4-inch vented, cross-drilled, grooved disc R: 14.2-inch vented, cross-drilled, grooved disc	F: 13.4-inch vented, cross-drilled disc R: 13.0-inch vented, cross-drilled disc
STABILITY CONTROL	fully defeatable, competition mode	fully defeatable, competition mode, launch control	fully defeatable, competition mode, launch control
TIRES	Pirelli P Zero F: 255/35ZR-20 (97Y) R: 295/30ZR-20 (101Y)	Michelin Pilot Super Sport F: 265/35ZR-19 (98Y) R: 295/30ZR-20 (101Y)	Pirelli P Zero F: 245/35ZR-20 (91Y) R: 305/30ZR-20 (103Y)

C/D TEST RESULTS

ACCELERATION			
0-30 MPH	1.3 sec	1.3 sec	1.4 sec
0-60 MPH	3.4 sec	3.0 sec	3.6 sec
0-100 MPH	8.0 sec	6.9 sec	8.5 sec
0-130 MPH	13.7 sec	11.7 sec	14.6 sec
1/4-MILE @ MPH	11.7 sec @ 122	11.2 sec @ 127	11.9 sec @ 118
ROLLING START, 5-60 MPH	3.9 sec	3.7 sec	4.2 sec
TOP GEAR, 30-50 MPH	2.2 sec	2.1 sec	2.7 sec
TOP GEAR, 50-70 MPH	2.8 sec	2.4 sec	2.8 sec
TOP SPEED	186 mph (gov't, mfr's claim)	193 mph (gov't, mfr's claim)	189 mph (drag, mfr's claim)
CHASSIS			
BRAKING, 70-0 MPH	137 feet	141 feet	136 feet
ROADHOLDING, 200-FT-DIA SKIDPAD	1.00 g	1.05 g	1.06 g
610-FT SLALOM	43.4 mph	45.2 mph	46.2 mph
WEIGHT			
CURB	4088 pounds	3677 pounds	3276 pounds
%FRONT/%REAR	54.5/45.5	47.5/52.5	37.7/62.3
FUEL			
TANK	18.5 gallons	17.2 gallons	16.9 gallons
RATING	91 octane	91 octane	93 octane
EPA CITY/HWY	15/23 mpg	16/24 mpg*	19/26 mpg
C/D 275-MILE TRIP	11 mpg	11 mpg	13 mpg
SOUND LEVEL			
IDLE	47 dBA	54 dBA	54 dBA
FULL THROTTLE	83 dBA	90 dBA	89 dBA
70-MPH CRUISE	72 dBA	74 dBA	75 dBA

tested in Schwäbisch Hall, Germany, by ERIC TINGWALL



*C/D estimated.

JAGUAR F-TYPE R COUPE

- + Looks great, attractively priced, ridiculously fast.
- Cramped, crude, and rude.
- A diamond that lacks polish.

the part-time variety, with an electronic clutch pack only directing torque to the front wheels when it needs to. It tamed the R coupe noticeably when compared with its rear-driven predecessor, a car that, under full throttle, we found felt like a rocket-propelled grenade. But even with the stability-control system switched on, we found the F-type's dynamic mode allowed a surprising amount of lateral slip, even on the dry pavement of our Swabian playground. Roll on too much power in a slower turn, and there's a disconcerting wait after the rear of the car starts to slide before the combined efforts of the four-wheel-drive and stability systems step in to straighten things out. It's a dynamic characteristic we fear will be responsible for a number of soiled golf pants. This definitely isn't the sort of four-wheel drive that gets you through a New England winter drama-free.

To be fair, the Jaguar is also exciting when you want it to be. And on the right road, with your reactions turned up to max, it's a responsive and rewarding companion. The steering offers fractionally more communication than either of the Germans, and the minimal distance between seat and rear axle delivers instant telemetry through your arse-antenna. It's easy to get the F-type into its groove, driving to its well-flagged limits of adhesion, and then using the throttle to adjust your cornering line.



↑ The pretty Jaguar F-type is positively brimming with character. It's too bad it lacks the agility of its lighter competitors.

It's quick, too. The Jaguar's porky 4088-pound curb weight means it's not as fleet as the less powerful Mercedes-AMG. But although beaten at the track, the F-type on real German roads never felt left behind. Credit goes to the V-8's brawnier mid-range responses. Unfortunately, the Jag's gear-changes feel clean but slow-witted compared with those of the dual-clutch gearboxes in both the Porsche and the Merc. And though



it stops well, recording a 137-foot 70-to-zero distance, the brake pedal feels disappointingly rubbery in this company.

It's also a packaging disaster. The F-type is just three inches shorter than the AMG and less than an inch narrower, but the cabin feels at least a segment smaller, with a low roof and a fat transmission tunnel bequeathing a driving position that could be politely described as cozy (and impolitely as cramped and uncomfortable). The coupe's hatch gives it more luggage space than its roadster sister offers, but much of the space behind its seats is taken up by the extra structure that Jaguar needed to create the tin-top, which goes most of the way to the roof. In the AMG, there's just a half-height bulkhead and a brace between the rear-spring towers.

Much as we would love for an outsider to beat the Germans on their home turf, it's not going to happen this time.

2. MERCEDES-AMG GT S

Devastatingly handsome in its own right, the GT's design tells a bigger story than the official one about emotional tension and muscular proportions. It pretty much looks like an SLS at the front and a wannabe Porsche at the rear, meaning it's a synthesis of design DNA that properly reflects the spirit of the car.

The bodywork is by no means "wrapped around the mechanicals," a phrase we hear



↑ This Mercedes GT S is resplendent in \$9900 worth of yellow paint. Or you could pay only \$3950 for matte-silver paint, if that's your thing.

issuing from the mouths of so many designers. Open the long hood and you'll find what appears to be a plastic engine cover. Unclip this and you'll discover it shields nothing more than the coolant reservoir and expansion tank. The twin-turbocharged V-8 is so compact that it sits several inches aft of the axle line, well behind this faux shroud. Mercedes could have easily made the GT a couple of feet shorter, but it presumably didn't want it to look underendowed next to the grandly phallic SLS AMG.

And despite being nearly \$100,000 cheaper than the recently retired SLS, the GT S is no poor relation. In addition to being the quickest car in this test across the board, it also outsprints the SLS. In our testing, we recorded a blistering 3.0-second zero-to-60 time, two-tenths quicker than even the megapriced SLS AMG Black Series. Both cars manage identical 11.2-second quarter-miles.





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Switch the stability-control system off, and the Mercedes becomes a tire-smoking Visigoth. It's a hugely exciting car, viscerally thrilling.



052

comparo



The GT S's cabin feels better finished and better equipped than the SLS's ever did, and the hatchback rear makes it vastly more practical. Other than the gullwing doors, you're really not missing much. But can it deliver on the other part of its mission, to beat the 911? In terms of raw firepower, absolutely. The V-8 is definitely the most charismatic engine here, rumbling like a straight-piped bulldozer at low speeds, then delivering some proper thunder when worked hard. It pulls cleanly and without lag, and although it might lack some low-down enthusiasm compared with the compressor-fed F-type, it revs higher and more relentlessly. It even pulls hard beyond 6600 rpm, where the Jaguar calls time.

The AMG's dual-clutch gearbox isn't as refined as the 911's PDK, with some noticeable clunks as it shuffles between first and second at low speed. But with one of the more aggressive drive programs selected through the rotary controller—which cycles through individual, comfort, sport, sport-plus, and race modes—gearchanges become brutally fast and accompanied by a head-bobbing torque bump that makes them feel even quicker.

The GT S, though, can't match the 911 for outright agility, the critical sports-car attribute. At regular speeds, it feels big and broad. It barely fits in some of Germany's narrow traffic lanes. On the more demanding mountain roads, moving faster, it does pull off that old cliché of shrinking around you. That said, it never feels as nimble or wieldy as the 911, although it's easily placed and sticks to a chosen line like a scandal. Grip levels are immense, and the stability control keeps the GT S under iron discipline. Lean on it as hard as you dare and it won't slip. Most of the time, fun is what happens between the corners.

You have to switch to the more permissive sport-handling mode if you want to rouse the chassis, thereby revealing a willingness to take instruction from the back end in a benign and predictable manner. Switch the stability off, and it becomes a tire-smoking Visigoth. It's a hugely exciting car, viscerally thrilling. It also drew crowds

MERCEDES-AMG GT S

- Storming performance, crowd-stopping looks.
- Too big to be truly agile.
- The most exciting Mercedes sports car since the original Gullwing.



▼ Below right: Well, no wonder the 911 GTS makes less horsepower than the others. It is apparently powered only by two small fans.

every time we stopped, with the spectators pretty much ignoring the two other cars. But in the ultimate analysis, it's not the finely honed driving instrument that even the fourth-from-the-top 911 is, and that's why Mercedes-AMG gets beaten here.

I. PORSCHE 911 GTS

The 911 has always stood against automotive evolution as a rear-engined Paleolithic leftover that, like an alligator, just works. And although we wouldn't dare to criticize the decision to leave the flat-six engine in the space most cars reserve for groceries or kidnapped mafia rats, we can state that, despite bringing 430 horsepower to the party, the GTS feels almost embarrassingly underpowered in this company.

It's quite the knife-at-a-gunfight disparity. And the difference on the road is even more obvious than it is on the VBOX; you can exit a corner in the Porsche mere inches behind the GT S and be looking at a gap of yards within seconds.

As you'd expect, the Porsche makes up for its performance discrepancy in lots of other ways. Indeed, in almost all other ways. It has the most grip here and the most proficiency going around corners. Almost all the old 911 dynamic foibles have been systematically engineered out of the 991-generation car, but the aft-heavy weight distribution still makes its presence felt in longer turns, getting all its power to the road, and supplying the slightly magical ability to influence the cornering line with minimal inputs. A fractional lift off the throttle, or a couple grams of extra pressure on it, can have as much effect as attempting to stomp the gas pedal through the carpet in our other challengers.

What's good is still great. The Porsche's engine, though lacking firepower here, is



still a masterpiece. It loves to rev, and it has a perfectly proportionate throttle response that makes even the AMG feel slightly hesitant. We loved its yowling hard-edged soundtrack, too, with a blast through the mile-long tunnel beneath the doubly bad burg of Bad Wildbad confirming it. Our test car came with the optional seven-speed dual-clutch that swaps ratios cleanly and quickly, even if it does default to shifting into the highest gear possible when left in its auto mode (do yourself a favor and select sport or sport-plus mode

PORSCHE 911 GTS

- ⊕ A precision driving instrument.
- ⊖ Outgunned by boosted rivals.
- ⊖ A slightly better version of the Carrera S.

every time you enter), creating an unseemly scramble for kickdowns when you want to stir things to life. Oh, and the 911 also has the best shift paddles, possibly as atonement for the horrible rocker switches once fitted to Tiptronic. They are longer and heavier than the Jaguar's plastic-feeling ones and have a more substantial action than those in the AMG.

There's no doubting that the GTS is some way from the top of the 911 tree. Other than a red rev counter and GTS-branded sill protectors, it feels like any other mid-ranking 911: comfortable and well finished but far more functional than the flamboyant Mercedes. And although we love its free-revving engine dearly, we can understand why—beyond just economy standards—Porsche will soon be replacing it with a brawnier turbocharged powerplant. But even outgunned as it is, this is still the best-driving high-end sports car extant. ⊖

★ FINAL RESULTS

RANK

1 2 3

2016 Jaguar F-type R coupe
2016 Mercedes-AMG GT S
Porsche 911 Carrera GTS
Maximum points available

VEHICLE

VEHICLE	DRIVER COMFORT	9	9	6
ERGONOMICS	10	7	9	8
REAR-SEAT COMFORT	5	1	0	0
CARGO SPACE*	5	5	4	4
FEATURES/AMENITIES*	10	7	9	10
FIT AND FINISH	10	9	9	8
INTERIOR STYLING	10	8	8	8
EXTERIOR STYLING	10	9	8	10
REBATES/EXTRAS*	5	0	0	0
AS-TESTED PRICE*	20	15	13	20
SUBTOTAL	95	70	69	74

POWERTRAIN

1/4-MILE ACCELERATION*	20	17	20	18
FLEXIBILITY*	5	4	3	4
FUEL ECONOMY*	10	10	8	8
ENGINE NVH	10	9	9	7
TRANSMISSION	10	9	8	7
SUBTOTAL	55	49	48	44

CHASSIS

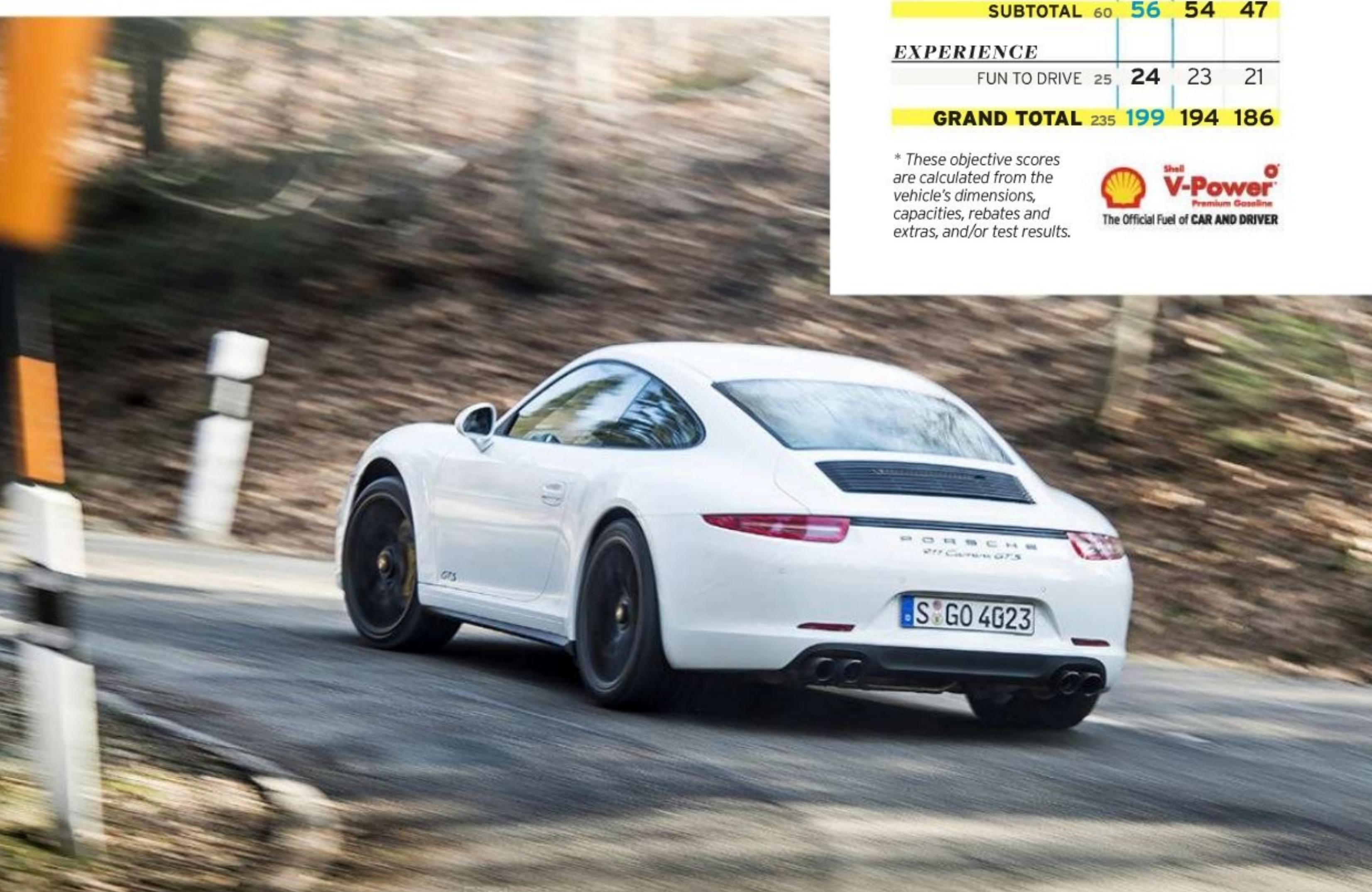
PERFORMANCE*	20	20	19	17
STEERING FEEL	10	9	9	9
BRAKE FEEL	10	9	9	6
HANDLING	10	10	9	8
RIDE	10	8	8	7
SUBTOTAL	60	56	54	47

EXPERIENCE

FUN TO DRIVE	25	24	23	21
GRAND TOTAL	235	199	194	186

* These objective scores are calculated from the vehicle's dimensions, capacities, rebates and extras, and/or test results.

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SOUL REBEL

road test. HONDA'S MICRO-UTE
STRIDES CONFIDENTLY
INTO A SEGMENT FULL OF
SHOWOFFS.

by JOHN PEARLEY HUFFMAN
photography by SEAN C. RICE

2016 HONDA HR-V EX-L AWD

The HR-V draws deeply on past and present. In many ways, it's a throwback to the best things 20th-century Honda ever did, such as elegant interiors, sweet suspension tuning, and well-considered details. And then it goes all Kendrick-Lamar-pimpin'-butterflies for its powertrain, electronics, even its very concept: This Honda is merely the latest to join the growing ranks of 21st-century micro-utes.

What exactly constitutes a crossover is elusive when shrunk to twerp size. Nissan's Juke is self-consciously quirky; the Chevrolet Trax [see page 102] is handsomely uncomplicated; Jeep's new Renegade mixes rugged heritage with adorable details; what exactly Fiat is doing with the 500X is, uh, interesting; and the upcoming Mazda CX-3 looks unpretentiously promising. But even if this is a messy newborn segment whose rules await discipline, the baby crossover is clearly the economy car of right now.

The biggest kid in this space is the exceedingly precious Kia Soul, which sells about 10,000 units a month in the United States, doesn't offer four-wheel drive, and is marketed with anthropomorphic hamsters. In contrast, the HR-V proffers elegance: restrained interior and exterior design that

doesn't court attention yet manages to be good-looking and substantial anyhow.

Honda hadn't announced pricing for the HR-V as this was written, only promising that it would start under \$20,000 and peak somewhere in the mid-to-high 20s for a loaded EX-L like our test vehicle. The HR-V should be on sale at dealerships as you read this.

Based on the Fit platform and built alongside it at Honda's plant in Celaya, Mexico, the HR-V is conventional in most of its mechanical details. There are struts up front and a torsion beam in the back, and the engine sits transversely under the hood. Like the Fit, the HR-V cleverly tucks its fuel tank under the driver's seat, where it's surrounded by protective steel plating.

The HR-V is, however, significantly larger than the Fit. At 102.8 inches, the wheelbase is 3.2 inches longer than its donor's. And at 169.1 inches, it's 9.1 inches lengthier overall. It's also a bit more than six inches longer than a Soul or Juke. But the HR-V is still more than 10 inches shorter than its big brother, the ludicrously popular CR-V.

Larger dimensions lead to some additional heft. This four-wheel-drive EX-L with leather and navigation weighed 3098 pounds—465 pounds more than a Fit with a CVT—which creates the need for some additional

power. So the Fit's pokey engine, a 130-hp 1.5-liter DOHC four, was set aside in favor of pokey-plus. That is, a 141-hp 1.8-liter SOHC four. While both engines feature 16 valves and Honda's signature i-VTEC variable-valve-timing-and-lift system, only the Fit's uses direct injection. And the HR-V's engine looks particularly wan in comparison with the turbocharged 1.6 in the Juke, which is rated at 188 horsepower.

Honda's build quality is apparent even before opening the driver's door. The panels all fit tightly on this preproduction test car, the 17-inch wheels look expensive, and there's no orange peel in the paint. Honda surrounds the entire bottom edge of the HR-V in black plastic—across the bumper covers, along the rockers, and around the wheel arches—making the vehicle look as if it's riding higher than it is. But the claimed 6.7 inches of unloaded ground clearance (4.7 inches fully loaded) is modest. It's smart to just stay off the trails.

What's best about the HR-V is inside, including elements such as the straightforward instrumentation grouped under a single binnacle. Simple shapes form the door panels; and the sweet, bright trim around the vents seems downright sophisticated. The seat cushions are short, but the leather covering them is soft and well stitched. After Honda's goofball adventures into awkward cabin designs (the Civic's two-tiered dashboard, for example), the HR-V's restrained style counts as something of a return to form.

Particularly appreciated is the large vent that runs across the dash in front of the right-seat passenger. It's a true compliment to say it really blows. Problematically, though, most of the usual control buttons are missing in action. In their place is a touch-sensitive five-inch LCD screen and



touch-sensitive black panel for the ventilation system. Stylistically, it's sleekly Bauhaus. Practically, it makes trying to change a radio station while wearing gloves tough.

Redundant audio and navigation controls—real switches—on the nicely padded steering wheel are the driver's default controls. Why risk frustration by dealing with the touch screen?

There's still a real button to start the engine, and the 1.8 comes to life with an un-Honda-like listlessness. It's smooth and nearly vibration-free, but it doesn't have the eager-to-rev character that makes the best Honda fours so beloved. Then again, this isn't an old Acura Integra or even an HR-V Si, so it's easy to move on in the spirit of forgiveness, with some hope intact.

It's when the transmission is engaged that the HR-V experience droops precipitously. A six-speed manual is available on front-drive HR-Vs, but opting for four-wheel drive means taking the



↑ The cabin is beautiful and well trimmed, and the vent is long indeed. But let's have some real HVAC and radio knobs to twirl, please.

automatic whether you want it or not. And the automatic is a CVT.

Continuously variable transmissions make a lot of sense. They're mechanically simple and sometimes more efficient than geared automatics. The problem is that their operation can result in an awful sound. And that's particularly irritating when they're paired with low-torque engines that need to rev to deliver decent acceleration.

The HR-V's rated torque of just 127 pound-feet peaks at a relatively frantic 4300 rpm. So with the CVT left in "D," the engine scoots right up to that torque peak and then sits there droning like the salutarian giving a junior-high commencement address. It's irritating enough that you'd



rather go back and repeat the eighth grade than listen to it.

Worst of all, the CVT and the modest power output conspire to strangle acceleration. On full drone, the HR-V slouched to 60 mph in 9.5 seconds and completed the quarter-mile in 17.4 seconds at 82 mph. That's about the same performance as the slow Chevy Trax, but a Soul equipped with the 164-hp 2.0-liter engine and six-speed automatic runs away from it.

In compensation, the EPA rates the four-wheel-drive HR-V at 27 mpg in the city and 32 mpg on the highway. In mixed driving, not including performance testing, *C/D* saw an impressive 35 mpg.

CVTs work best when mated to engines that produce more torque down low and in a wider band across their operating range. Compared with the HR-V's tranny, the CVT in the turbocharged Juke, which receives 177 pound-feet of torque between 1600 and 5200 rpm, is a paragon of dignified athleticism.

Fortunately, Honda does supply a workaround in the form of optional paddle shifters that cue transmission software with seven virtual forward gears. With the shifter in "S" and using the paddles, it's pos-

sible to pretend that the HR-V doesn't have a CVT at all. The shifts are quick if not firm, and the engine even develops a slight induction lilt that can be engaging.

Honda does electric power steering well, and the HR-V is no exception. The steering isn't particularly fast, but it communicates nicely and the HR-V's suspension is tuned more stiffly than many competitors', so there's little body roll in corners without sacrificing much comfort. The 215/55R-17

Michelin Primacy MXV4 all-season tires are quiet and shed water like a malamute sheds fur, but they lack tenacity, posting just 0.80 g on the skidpad. And yet, as with the Fit, there's some dormant star power in this chassis waiting to be unleashed given the right rubber.

Under hard braking, the HR-V remains impressively flat for being in a class of vehicles notorious for noses that dive so hard that they get the bends coming back up. Even though the 70-to-zero stopping distance is modest, pedal feel is predictable.

Everything a 21st-century commuter needs is accounted for in the HR-V. There are multiple USB ports, the available navigation system is intuitive, and the rear seat easily moves away to stretch out the gener-



ous cargo space. And, as with almost every current Honda, there's a camera beneath the right-side mirror for scoping out that rear-quarter traffic blind spot. When driven gingerly, with tender accelerator application and lots of gliding, a light encircling the speedometer glows green in praise of your environmental virtue.

But there are 20th-century virtues worth celebrating, too. Such as having the courtesy to drive swiftly enough so that traffic doesn't stack up behind you and your glowing-green halo. Such as the real enjoyment of a mechanical engagement between driver, gears, and car. Honda has recaptured many of its time-tested virtues with the HR-V, but there are still some ripe ones out there ready to be picked.

2016 HONDA HR-V EX-L AWD

- The 20th-century virtues of clean design, a well-tuned suspension, and a handsome and flexible interior.
- The 21st-century kludges that keep it from being mechanically engaging or quick. Like that damned, droning CVT.
- Millennials, your car is finally ready.



. road test

2016 HONDA
HR-V EX-L AWD

▼ SPECIFICATIONS

PRICE	
AS TESTED	\$27,500*
BASE	\$26,500*

VEHICLE TYPE: front-engine, 4-wheel-drive, 5-passenger, 4-door hatchback

OPTION: navigation

STANDARD: power windows, locks, and sunroof; remote locking; cruise control; tilting and telescoping steering wheel; rear wiper

AUDIO SYSTEM: satellite radio, CD player, 2 USB and Bluetooth-audio inputs, 6 speakers

ENGINE

inline-4, aluminum block and head

BORE X STROKE 3.19 x 3.44 in, 81.0 x 87.3 mm

DISPLACEMENT 110 cu in, 1799 cc

COMPRESSION RATIO 10.6:1

FUEL DELIVERY SYSTEM port injection

VALVE GEAR ... single overhead cam, 4 valves per cylinder, variable intake-valve timing and lift

REDLINE/FUEL CUTOFF 6700/6700 rpm

POWER 141 hp @ 6500 rpm

TORQUE 127 lb-ft @ 4300 rpm

DRIVETRAIN

TRANSMISSION continuously variable automatic with manual shifting mode

FINAL-DRIVE RATIO 5.44:1

4-WHEEL-DRIVE SYSTEM full time with automatic rear-axle engagement

GEAR	RATIO	MPH PER 1000 RPM	MAX SPEED IN GEAR (rpm)
LOWEST	2.53	5.5	37 mph (6700)
HIGHEST	0.41	34.0	17 mph (3450)

CHASSIS

unit construction

BODY MATERIAL: steel stampings

STEERING

rack-and-pinion with variable electric power assist

RATIO 15.2:1

TURNS LOCK-TO-LOCK 2.7

TURNING CIRCLE CURB-TO-CURB 37.4

SUSPENSION

F: ind, strut located by a control arm, coil springs, anti-roll bar

R: ind, trailing arm integral with a transverse member, coil springs

BRAKES

F: 11.5 x 1.0-in vented disc

R: 11.1 x 0.4-in disc

STABILITY CONTROL fully defeatable

EXTERIOR DIMENSIONS

WHEELBASE	102.8 in
LENGTH	169.1 in
WIDTH	69.8 in
HEIGHT	63.2 in
FRONT TRACK	60.4 in
REAR TRACK	60.6 in
GROUND CLEARANCE	6.7 in

INTERIOR DIMENSIONS

SAE VOLUME F: 51 cu ft R: 45 cu ft

CARGO (SEATS UP/MAX) 23/56 cu ft

PRACTICAL STOWAGE

LENGTH OF PIPE 117.3 in

LARGEST FLAT PANEL,

L x W 64.0 x 39.5 in

NO. OF 9 x 11 x 16-IN BOXES,

SEATS UP/MAX 14/37

WHEELS AND TIRES

WHEEL SIZE/CONSTRUCTION 7.5 x 17 in

/cast aluminum

TIRES Michelin Primacy MXV4

215/55R17 94V

CAR AND DRIVER TEST RESULTS

ACCELERATION

	SECONDS
ZERO TO 30 MPH	3.7
40 MPH	5.3
50 MPH	7.2
60 MPH	9.5
70 MPH	12.5
80 MPH	16.5
90 MPH	21.9
100 MPH	30.8
ROLLING START, 5-60 MPH	9.9
TOP GEAR, 30-50 MPH	4.8
TOP GEAR, 50-70 MPH	6.8
1/4-MILE	17.4 sec @ 82 mph
TOP SPEED (DRAG LTD)	117 mph

TEST NOTES: Not much powertrain enthusiasm here. The CVT spins the engine to 6700 and then back to about 6000 rpm as 60 mph is reached. CVT conspires against a good launch, and the engine racket is as intrusive and annoying as a sitcom mother-in-law.

HANDLING

ROADHOLDING, 300-FT-DIA SKIDPAD 0.80 g
UNDERSTEER MINIMAL

TEST NOTES: Michelin Primacy MXV4 tires howl and relinquish their hold without much of a fight. Secure understeer at the limit. Good body control and excellent steering feel. The HR-V comes across as small and light; it would benefit from grippier tires.

BRAKING, 70-TO-ZERO MPH

FIRST STOP	183 ft
SHORTEST STOP	183 ft
LONGEST STOP	188 ft
FADE RATING	NONE

TEST NOTES: Good pedal feel. Nicely sorted chassis allows for very little dive. Stops are secure, happening without any drama, but braking distances from 70 mph are on the long side. A tiny bit of fade, but not enough to alter the rating or affect stopping distances.

WEIGHT

CURB 3098 lb
PER HORSEPOWER 22.0 lb
DISTRIBUTION F: 59.8% R: 40.2%
CENTER-OF-GRAVITY HEIGHT 25.0 in
TOWING CAPACITY 0 lb

FUEL

CAPACITY 13.2 gal
OCTANE 87 (required)
EPA CITY/HWY 27/32 mpg
C/D OBSERVED **35 mpg**

INTERIOR SOUND LEVEL

IDLE 43 dBA
FULL THROTTLE 76 dBA
70-MPH CRUISING 69 dBA

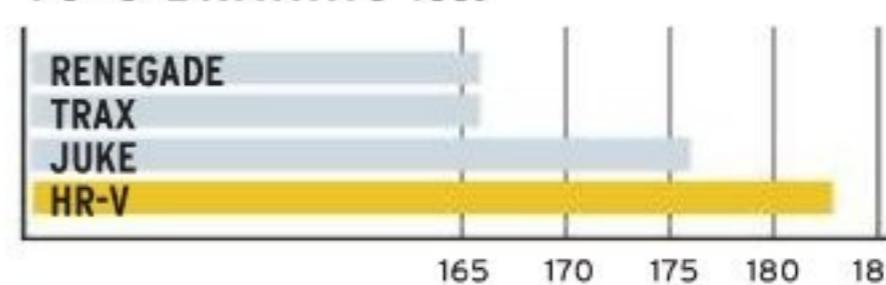
▼ COMPETITORS

CHEVROLET TRAX LTZ AWD (1.4-L I-4, 138 HP, 6-SP AUTO)
HONDA HR-V EX-L AWD (1.8-L I-4, 141 HP, CVT)
JEEP RENEGADE LIMITED 4X4 (2.4-L I-4, 180 HP, 9-SP AUTO)
NISSAN JUKE SV AWD (1.6-L I-4, 188 HP, CVT)

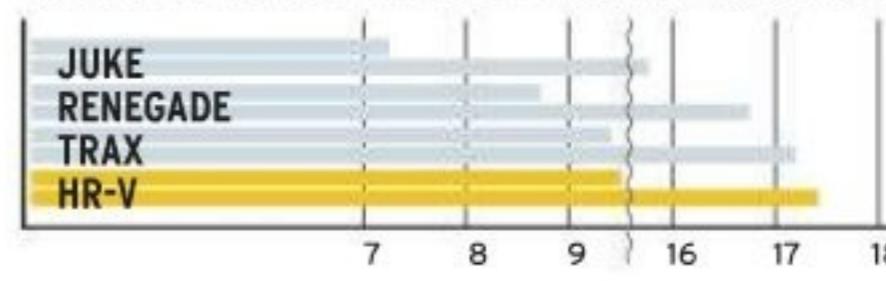
CURRENT BASE PRICE dollars x 1000



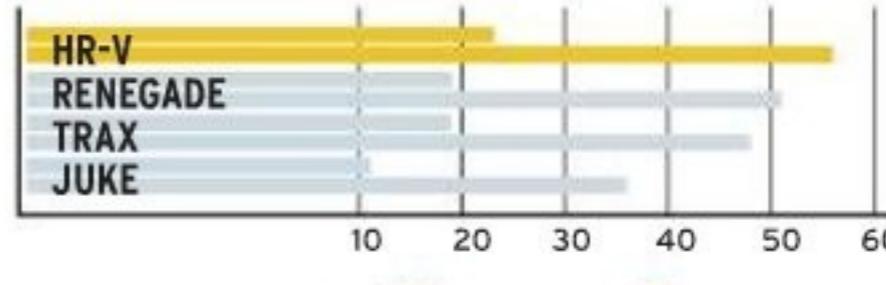
70-0 BRAKING feet



ACCELERATION 0-60 & 1/4-mile, seconds



CARGO VOLUME seats up & max, cubic feet



Shell V-Power
Premium Gasoline
The Official Fuel of CAR AND DRIVER



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CATCH



Can **WAZE**, the world's most popular cop-spotting app, enable an orange blur of a McLaren to streak across Florida undetected? We head to **ALLIGATOR ALLEY** to find out.

by Ezra Dyer ||| photography by Clint Davis

MOVE IF YOU CAN



waze,

if you've not heard of it, is the greatest driving app ever devised. Scratch that—it's the greatest invention of the 21st century, a glorious manifestation of the connected utopia, the latest evidence that if The Singularity arrives tomorrow, I'm okay with it. Because Waze, my friends, tells you where the cops are. More specifically, other drivers tell you where the cops are through Waze. You see a cop, you tag him by pressing an icon on your phone or tablet, and a moment later he shows up on the navigation screens of your fellow travelers. Oh, how cops hate it.

Numerous police departments have filed complaints with Google, Waze's owner, on the specious grounds that officers are imperiled when the citizenry knows the whereabouts of their marked cruisers on public highways. And Miami police have even taken to churlish retribution, logging false locations to taint the data. Naturally, then, we decided to head to Miami to further strain officer-motorist relations with a nuclear-orange McLaren 650S Spider. Based on my plans for said car, there are really only two possible outcomes: use Waze or get Tased.

The mission, which I foolishly accepted and now sort of wish I could back out of, is to ascertain whether Waze is really the greatest thing since the Fuzzbuster. Using only Waze, can I whip this dihedral-doored cop magnet across trooper-infested Alligator Alley without ending my day handcuffed to a swamp person in Broward County lockup? Hey, I've got nothing to lose but my license. And, well, I'm terrified of losing my license.

My goal is to drive coast to coast, Atlantic to Gulf of Mexico, at a speed way out of my comfort zone. According to my imperfect Everglades legal expertise, penalties vary from county to county but there seem to be some common denominators. Most pertinently, 30 mph over the speed limit is the point where a big ticket turns into a more serious problem, one that involves mandatory court appearances and possibly a ride in the urine-stained back seat of a local police interceptor. Since most of Alligator Alley is posted at 70 mph, that means my magic number is 99. Any maniac can hit a buck fifty for 10 seconds, but it takes discipline and strategy to keep the needle above 90 for miles on end.

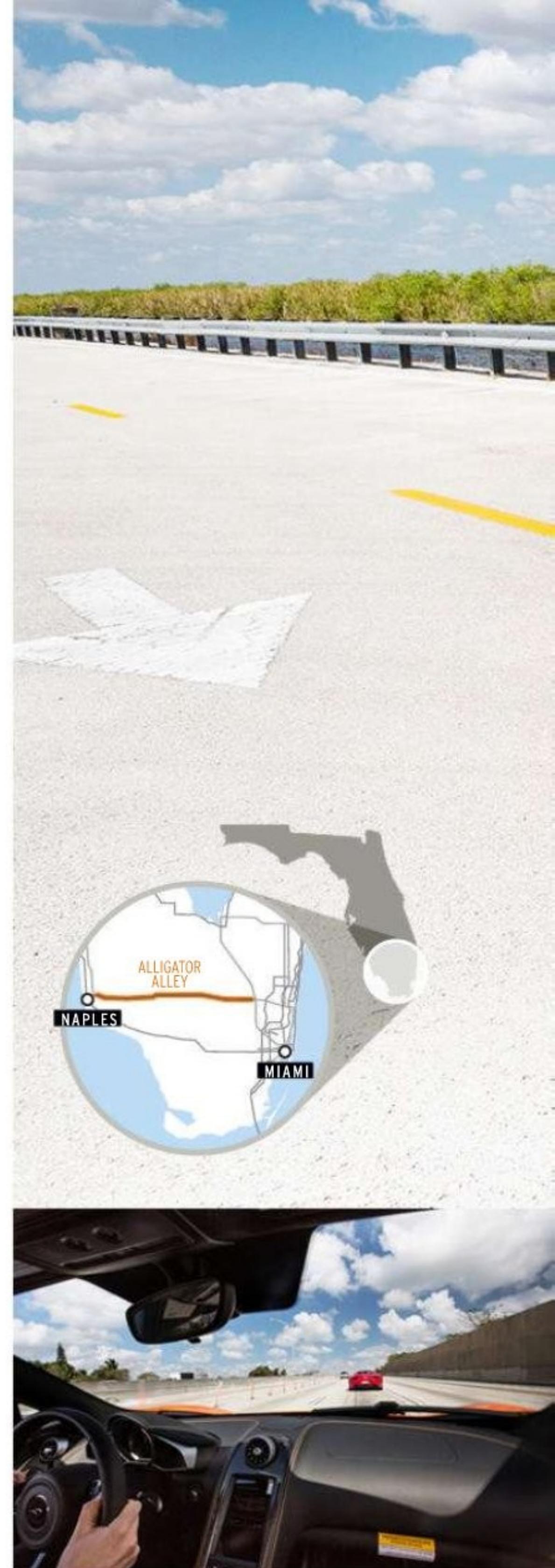
▼ SPECIFICATIONS

VEHICLE TYPE:	mid-engine, rear-wheel-drive, 2-passenger, 2-door convertible
PRICE AS TESTED	\$351,935
BASE PRICE	\$282,625
ENGINE TYPE:	twin-turbocharged and intercooled DOHC 32-valve V-8, aluminum block and heads, port fuel injection
DISPLACEMENT	232 cu in, 3799 cc
POWER	641 hp @ 7250 rpm
TORQUE	500 lb-ft @ 6000 rpm
TRANSMISSION:	7-speed dual-clutch automatic with manual shifting mode
DIMENSIONS	
WHEELBASE	105.1 in
LENGTH	177.6 in
WIDTH	75.1 in
HEIGHT	47.4 in
CURB WEIGHT	3250 lb

▼ C/D TEST RESULTS

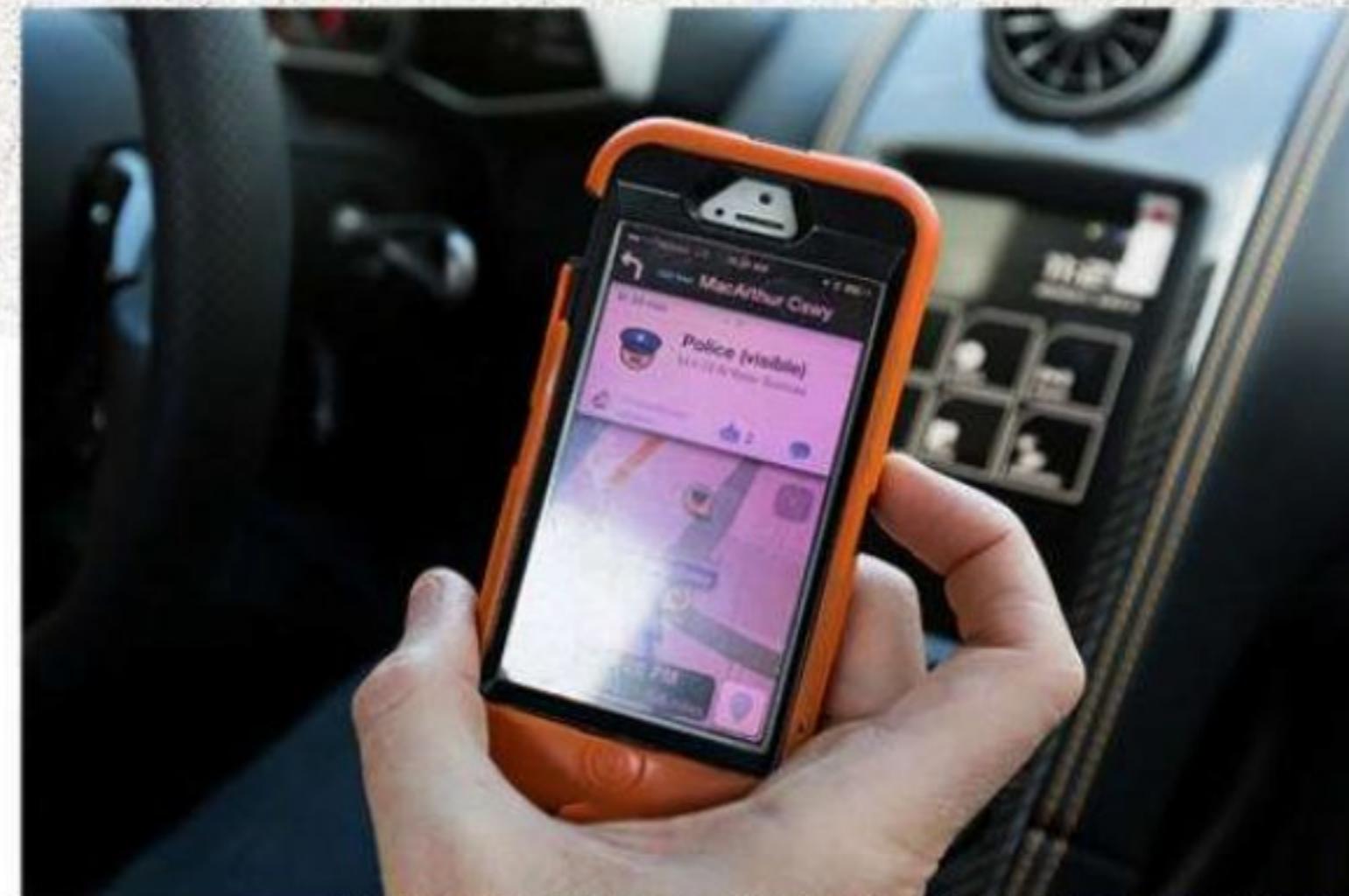
ZERO TO 60 MPH	2.8 sec
ZERO TO 100 MPH	5.8 sec
ZERO TO 150 MPH	13.2 sec
ROLLING START, 5-60 MPH	3.6 sec
1/4-MILE	10.5 sec @ 136 mph
TOP SPEED (mfr's est)	207 mph
BRAKING, 70-0 MPH	155 ft
ROADHOLDING, 300-FT-DIA SKIDPAD	1.07 g
FUEL ECONOMY	
EPA CITY/HWY	16/22 mpg

■ TEST NOTES: Sport mode locks out seventh gear, which is a great aid to passing acceleration. Brakes lack initial bite, but launch control is stunning for a rear-drive car.



We begin our blitz with the McLaren's tail backed up against the dunes on South Pointe Drive in South Beach. My iPhone is plugged into the USB port, because Waze kills your phone's battery. Photographer Clint Davis also has Waze running, and he'll be paying attention to the devices so I can concentrate on driving. Just for extra backup, I've got a third Waze app running on an Android tablet tucked into the cargo net between the McLaren's seats. I had to register a new profile for that one, which is why I can tell you that the screen name "DrewPBallz" is available. (Was available.)

We're less than a mile into the drive when Waze calls out its first warning. I



↑ The McLaren 650S may be Miami's Chevy, but it is still cop bait *par excellence*. Bottom: Officers are off their bikes and out of their cruisers trying to confuse Wazers.



mind my speed, and sure enough, there's a cruiser parked conspicuously by a marina on the opposite side of the street. As a matter of policy, I take it easy until I've lost visual contact with law enforcement. That strategy now serves me well, because this particular officer is attempting to thwart Waze by using that cruiser as a decoy—a cop car is accurately pinpointed on the app, but the man himself lurks on the sidewalk several blocks away, aiming a laser gun at oncoming traffic, some cohorts with a Ford Explorer tucked into the parking lot behind him. Nice try, Johnny Law. You're gonna have to work harder than that before you catch me going hammer-down in a 650S.

A few minutes later we're on Interstate 95, where the fun—and the stress—really begins. This being Miami, we're barely outside city limits before a guy in a Ferrari 458 Spider pulls alongside and instigates me to indulge in the McLaren's 641 horsepower. I oblige, to a point. I'll line up next to him for a third-gear pull each time traffic opens up,





↑ If an orange McLaren isn't visible enough, its pop-up air brake will clearly let highway patrol know you've just been flouting their laws.

cops clustered in cellphone dead zones since you need a signal to upload their location. Waze also requires a critical mass of traffic because an empty road tells no secrets. And, of course, social police-spotting is worthless against cruisers that are in motion. Waze can't help you if you're clocked from an oncoming lane, or if you run up behind an unmarked Chevy Tahoe that happens to be helmed by a short-haired, mustachioed gentleman with a newfound grudge against people who drive \$350,000 British roadsters.

I'm hoping that if I do see a cop, he doesn't know too much about the McLaren 650S, specifically its active aero system. When you go hard on the McLaren's carbon-ceramic brakes, the rear spoiler is flung up vertically into the slipstream to act as an air brake. Whap! In an instant, the rear view is blocked by your own wing tow-

but I'm not weaving across three lanes at 110 mph, Waze or no Waze. Best practices dictate that one should avoid raising the ire of fellow motorists. Waze works because everyone has phones, but 9-1-1 also works because everyone has phones. Don't turn the hive against you.

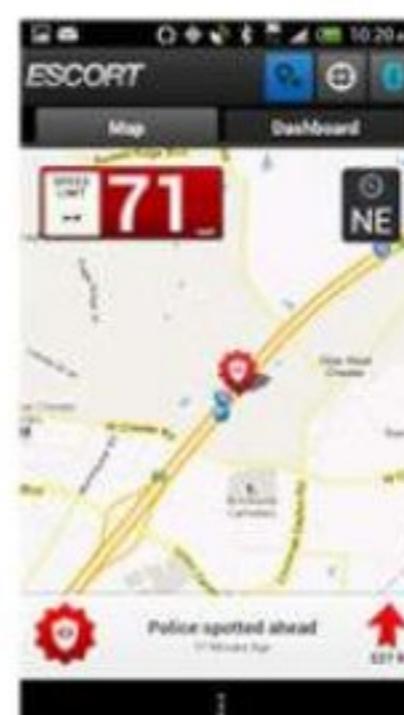
Soon we're on Interstate 75, a.k.a. Everglades Parkway, a.k.a. Alligator Alley. Naples is ostensibly our destination, but this 100-mile stretch of ennui-inducing highway is, for our purposes, the real attraction. A couple of weeks earlier, I'd run the route in a Mercedes-Benz G63 AMG and encountered about 10 state troopers along the way. Sure, Waze picked them all up, but somebody had to be the first car to encounter each of those guys. I can't afford to be the first car.

Nonetheless, I hold the speedometer deep into the ticket-able territory, mile after mile, defying my every instinct for license preservation. I can't help but dwell on all the factors that might cause Waze to fail me. As the number of Wazers has grown, cops have adapted. They move when they get tagged, for example. If you see multiple cops tagged within a couple of miles, it's usually just the same one, changing his spot every few minutes. I've seen

More Waze to Circumvent Tickets

That police departments have put Waze in their cross hairs may have kept the cop-spotting tool in headlines, but Waze isn't the only crowdsourcing app capable of dehydrating Johnny Law's revenue stream. Here are three other useful offerings, and it's no coincidence that two come from established radar-detector companies.

-Alex Stoklosa



ESCORT LIVE

MAIN FUNCTION: Speed-trap and red-light-camera alerts. Escort preloads known radar and red-light-camera locations, and the crowd handles the rest. Basic navigation is included, but a premium-access plan brings real-time alerts, speed-limit info, and integration with Escort radar-detector units.

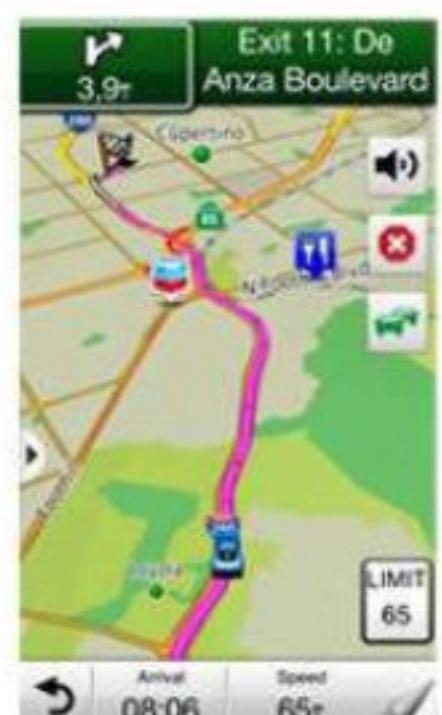
WHAT IT COSTS: \$4.99 via Google Play and iTunes stores (premium access, \$49.99 a year).



COBRA iRADAR

MAIN FUNCTION: As with Escort Live, Cobra's iRADAR is geared toward saving you from friendly roadside chats with smokey—or from cold, impersonal, mailed tickets from camera smokeys. It can link up with a Cobra detector to transform your mobile device into a display for the unit's alerts and warnings, while simultaneously handling basic navigation functions.

WHAT IT COSTS: Free via Google Play and iTunes stores.



GARMIN U.S.A.

MAIN FUNCTION: Like Waze, Garmin's smartphone app is a navigation tool first and foremost. Which makes sense, considering that Garmin has always been associated with top-flight global-positioning-system receivers. But this app isn't a one-trick pony: Users can submit speed-trap and red-light-camera locations, painting a useful picture entitled "Stuff to Watch Out For."

WHAT IT COSTS: \$49.99 via iTunes store.

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- take control



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ering above the car's tail, as subtle as an NHRA parachute. It may as well say "Law-breaker" across the top of it. When I do brake, I try to keep the threshold below the point where the McLaren's aeronautics decide to advertise my guilt.

Mostly, though, I'm just cruising, albeit far faster than normal. And on a road like this, the 650S is about as good as supercars get. Set the powertrain and suspension to normal, and the intake stays quiet while the hydraulic anti-roll system goes all Gumby supple. Sure, you can go into manual mode and warp toward the horizon any time you feel like it, but the McLaren is uncommonly



happy going mellow. Inasmuch as doing 100 mph or so is ever mellow.

By the time we're about halfway across the state, I notice a curious situation: I'm sticking to my target speed, but I'm not outrunning the plebes. In fact, I have a trail of pilot fish, Nissans and Buicks, cruising in my wake. A guy in a Chevy Equinox doesn't even want to let me pass until I bump right against triple digits, at which point he, too, falls in behind the sacrificial orange arrowhead. If we do see a cop, we all know who's taking the fall, and it ain't the lady in the '96 Century. But this is an incredible development, the likes of which I've never seen in hundreds of thousands of miles of driving: wide-scale civil disobedience, a caravan of strangers hauling ass across a U.S. state, as calm as if we were all on a derestricted autobahn. And this isn't the hard-core speed crowd, the guys with a Valentine One and



an Escort Passport Max2 stacked on the dash of a Porsche 911 Turbo. These are just people who want to get where they're going and feel that the speed limit is unreasonably low in certain places—like, say, a dead-straight divided highway cutting flat through a swamp.

I slow down only three times. Once, I come up behind a white Dodge Charger and have to suss out its provenance before lighting the afterburners. The next time, Waze gives its customary half-mile cop warning, and by the time I reach the cruiser on the shoulder I'm doing an innocuous 73 mph. The last one I spot the old-fashioned way, tucked in under an overpass on the median. I thank my recent LASIK surgery and newfound 20-15 vision. "Was that one not on Waze?" I ask Clint. "It was," he replies, "but in the oncoming lane, so I didn't mention it." Always mention it, Clint! This is action-

able intelligence! What if he drove out after us in reverse? You never know how these crazy cops will try to beat the Waze.

We make it across I-75 in a little more than an hour (hey, we stopped for photos). You can do the math. There weren't many cops, but Waze called them all, proving that it's a powerful tool for ticket avoidance, the social-media equivalent of a friendly headlight flick. Oh, and it works pretty well for beating traffic, too.

However, scientifically speaking, one trip is a small sample. To really confirm that Waze is cool and McLarens are fast, further research is required. Taillights 100 yards from the Gulf of Mexico, I put the top down, plug in my phone, and get ready to do it all over again heading the other way. ■

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WARNING: This product contains nicotine derived from tobacco. Nicotine is an addictive chemical. (Photography by Francesco Carrozzini)

LONG-TERM TEST

— 2014 CADILLAC CTS VSPORT —

071

So Long, Detroit

CADILLAC MAY BE MOVING OUT
OF MOTOWN, BUT THE CTS
IS ALREADY ON ANOTHER PLANET.

by JARED GALL
photography by ROY RITCHIE



In 2014, Cadillac poached, from Infiniti, one of the auto industry's most celebrated and outspoken execs. It also showed the 464-hp ATS-V and the 640-hp CTS-V, and said that it will be renaming its lineup using designations beginning with either CT (cars) or XT (trucks) followed by a number. But nothing it did generated more hand-

wringing than the brand's announcement that it was moving its headquarters from Detroit to New York City.

Chief among the justifications for the move was to physically separate Cadillac from the rest of General Motors, the better to foster a distinct product portfolio. But that process is already underway. Cadillac's ATS and

the new CTS boast a segment-defining excellence absent in many GM products. Introduced for the 2014 model year, the third-generation CTS—particularly in 420-hp, twin-turbo 3.6-liter V-6-bearing Vsport trim—is a sports sedan of singular focus. Ultra-high-definition feedback streams through the steering, the chassis reacts

. long-term test

like that of a 14/10-scale BMW E30, and the engine hurtles the car forward with smoothness and sonorousness heretofore reserved for sixes of the straight Bavarian variety, not bent American ones. We named the CTS to our 10Best list for 2014 and 2015, ordering up a long-termer in between the handoff of the two trophies.

For its 40,000-mile stay, we naturally opted for the \$59,995 Vsport, but stopped there, without adding any options. The car comes standard with important mechanical bits such as adaptive magnetorheological shocks, an electronically controlled limited-slip differential, and Brembo brakes. A third zone for the dual-zone climate control or 20-way adjustable seats just seemed like unnecessary embellishments.

And the Vsport impressed right out of the box, sticking to the skidpad at 0.95g and stopping from 70 mph in just 155 feet—bona fide supersedan numbers. The last BMW M5 we tested couldn't match either of those figures, and while the lighter M3 manages higher cornering grip, it beats the Vsport's stopping distance by only two feet.

And with two Mitsubishi turbos squeezing 15 psi into the intake, the overachieving 3.6 pushed the CTS to 60 mph in 4.6 seconds, through the quarter-mile in 13.1 at 110 mph, and up to a 171-mph terminal velocity.

We'll admit to some skepticism and maybe even a little bit of eye rolling when we first heard the output figures for the CTS's twin-turbo V-6: 420 horsepower at 5750 rpm and 430 pound-feet at 3500. General Motors is not a house renowned for its mastery of turbocharging, and it has a long history of V-6s ranging from humdrum on their best days to dreadful on their worst. But this engine is something entirely different. The torque comes on low and stays so strong throughout the rev range that the

▼ Despite our best efforts, the motorized cup-holder cover never malfunctioned. Oh, and the twin-turbo V-6 ain't too shabby, either.

6500-rpm-redline upshifts feel premature. And the sound, enhanced as it is in the style of the day through the audio system's speakers, is pure sports-car warble. In the same breath—okay, the same press release—as it announced its move to the isle of Manhattan, GM also announced that Cadillac would be reorganized as a separate business unit. That means more autonomy and greater separation from the goings-on in the silvery monolith. And it means more brand-specific engines like this one. New president Johan de Nysschen has already spilled the beans on the twin-turbo V-8 in Cadillac's future.

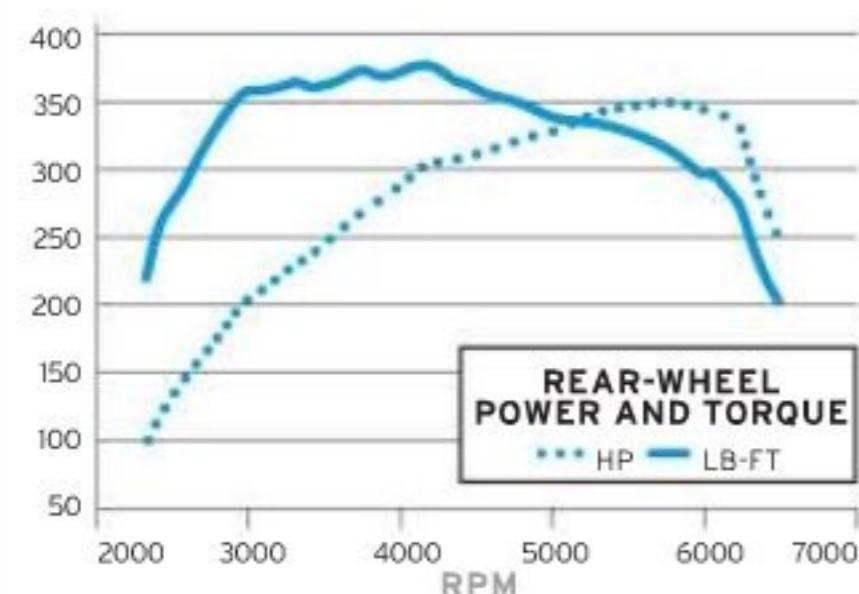
Not that the six couldn't use more massaging. The CTS overlapped our long-term 2013 Audi S7 early in its billet, and the similarities between the two vehicles were hard to ignore. Not just that both were blue luxury cars, but that both had turbocharged engines making 420 horsepower, though the Audi had two more cylinders and an extra 429 cubic centimeters of displacement. It showed in the way the two engines make their power. Under wide-open throttle, both are eye-opening. But in only moderately aggressive driving, Audi's 4.0-liter



2014 CADILLAC CTS VSPORT

▼ SPECIFICATIONS

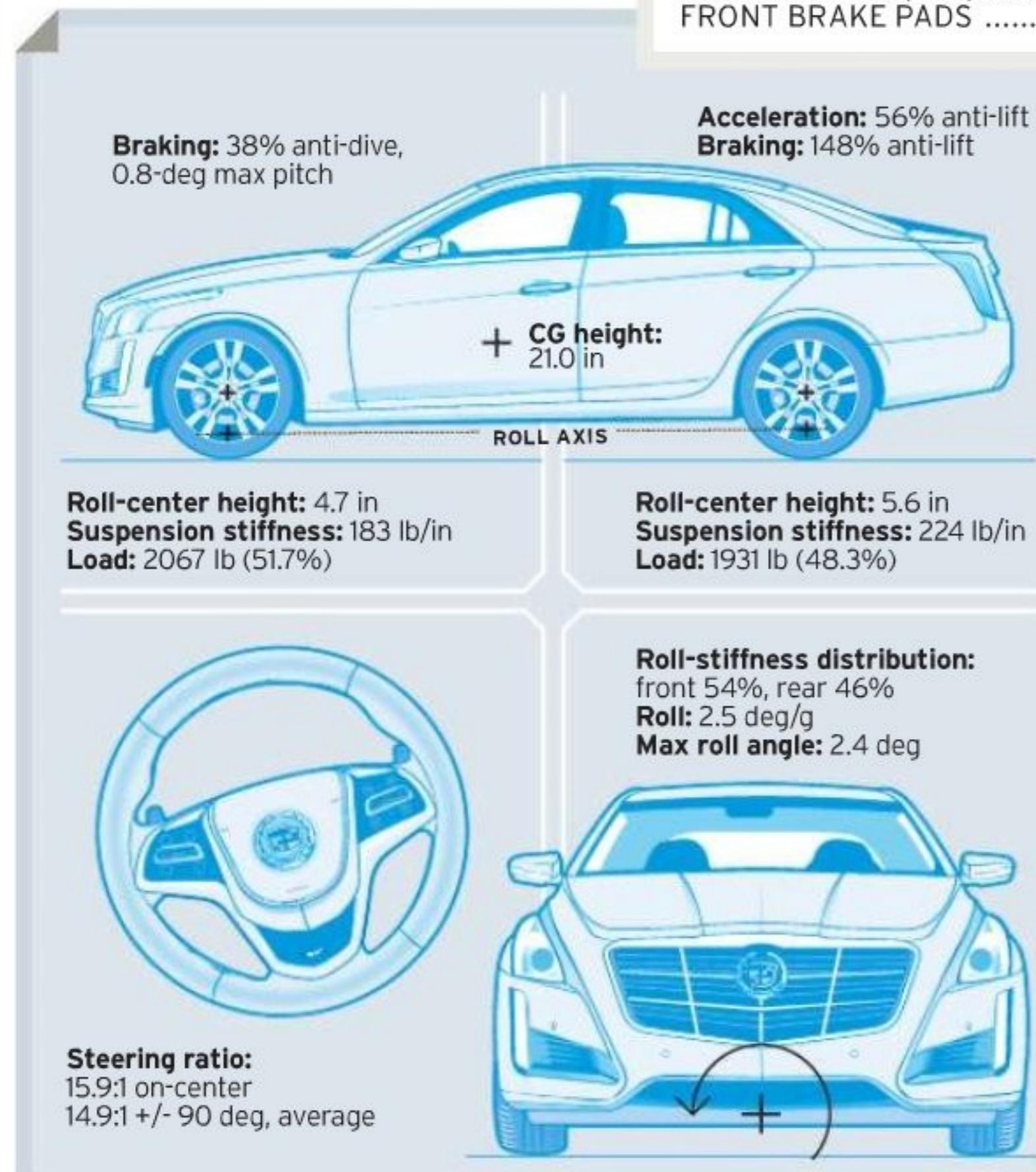
VEHICLE TYPE:	front-engine, rear-wheel-drive, 5-passenger, 4-door sedan
PRICE AS TESTED	\$59,995
BASE PRICE	\$59,995
ENGINE TYPE:	twin-turbocharged and intercooled DOHC 24-valve V-6, aluminum block and heads, direct fuel injection
DISPLACEMENT	217 cu in, 3564 cc
POWER	420 hp @ 5750 rpm
TORQUE	430 lb-ft @ 3500 rpm
TRANSMISSION	8-speed automatic with manual shifting mode



WHEELBASE	114.6 in
LENGTH	195.5 in
WIDTH	72.2 in
HEIGHT	57.2 in
CURB WEIGHT	3998 lb

WARRANTY
4 years/50,000 miles bumper to bumper
6 years/70,000 miles powertrain
4 years/50,000 miles corrosion protection
6 years/70,000 miles roadside assistance
4 years/50,000 miles scheduled maintenance

MODEL-YEAR CHANGES
2015: The wreath around Cadillac's crest disappears from the grille and trunklid. Inside, there's a new 4G LTE Wi-Fi hotspot and optional wireless phone charging.



▼ C/D TEST RESULTS

PERFORMANCE

	NEW	40,000
ZERO TO 60 MPH	4.6 sec	4.6 sec
ZERO TO 100 MPH	11.0 sec	10.8 sec
ZERO TO 130 MPH	19.0 sec	18.8 sec
ROLLING START, 5-60 MPH	5.1 sec	5.1 sec
1/4-MILE	13.1 sec	13.0 sec
@ 110 mph	155 ft	168 ft
BRAKING, 70-0 MPH		
ROADHOLDING,		
300-FT-DIA SKIDPAD	0.95 g	—
TOP SPEED (DRAG LIMITED)		171 mph
EPA FUEL ECONOMY, CITY/HWY		16/24 mpg
C/D-OBSERVED FUEL ECONOMY		21 mpg
UNSCHEDULED OIL ADDITIONS		0 qt

A2 WIND TUNNEL MEASUREMENTS

DRAG COEFFICIENT	0.30
FRONTAL AREA	24.4 sq ft
DRAG AREA (Cd x FRONTAL AREA)	7.3 sq ft
DRAG FORCE @ 70 MPH	.91 lb
AERO POWER @ 70 MPH	17 hp
AERO POWER @ 100 MPH	50 hp
FRONT-AXLE LIFT @ 70 MPH	20 lb
REAR-AXLE LIFT @ 70 MPH	15 lb

OPERATING COSTS (FOR 40,000 MILES)

SERVICE (5 SCHEDULED, 3 UNSCHEDULED)	\$0
NORMAL WEAR	\$1455
GASOLINE (@ \$3.58 PER GALLON)	\$6817

NONWARRANTY REPAIRS

ALIGNMENT	\$90
-----------	------

DAMAGE AND DESTRUCTION

STRAIGHTEN AND BALANCE WHEEL	\$140
REPAIR FRONT-END DAMAGE	\$5971
REPLACE WINDSHIELD	\$673

LIFE EXPECTANCIES (ESTIMATED FROM 40,000-MILE TEST)

FRONT TIRES	30,000 miles
REAR TIRES	20,000 miles
FRONT BRAKE PADS	more than 100,000 miles
REAR BRAKE PADS	more than 100,000 miles

WHAT BITS AND PIECES COST

HEADLAMP	\$1250
ENGINE AIR FILTER	\$77
OIL FILTER	\$5
WHEEL	\$495
TIRES (FRONT/REAR)	\$296/\$365
WIPER BLADES (LEFT/RIGHT)	\$24/\$24
FRONT BRAKE PADS	\$234

▼ GLOSSARY

Anti-dive, -lift, -squat: Terms that describe how suspension geometry is configured to counter body movement during acceleration and braking.

Suspension stiffness: The force from acceleration, braking, cornering, or bumps required to deflect each wheel one inch.

Roll center: A hypothetical point around which the body rolls in corners.

Roll axis: A line connecting front- and rear-suspension roll centers.

Steering ratio: Degrees of steering-wheel movement required to change the front wheels' angle one degree.

Roll stiffness: A car body's resistance to roll in corners; suspension springs, anti-roll bars, and tire sidewalls all contribute to this metric. How this resistance is distributed between the front and rear axles is a major understeer determinant.

RANTS AND RAVES

JEFF SABATINI

Just once, I'd like to get in a GM car and say, "Wow, this is a lot nicer than it had to be." But that may never happen.

MIKE SUTTON

Forget CUE and give me a damn knob.

JENNIFER HARRINGTON

The maps need to be updated. While on U.S. 24 in Ohio, CUE thought I was off-roading for 30 minutes and the road was nowhere in sight on the map.

RON SESSIONS

The structural adhesives that GM uses at weld joints to glue each CTS together really pay off in stiffness; this is a very tight structure.

CAROLYN PAVIA-RAUCHMAN

I'd vote for 100,000 miles in this sedan.

TONY QUIROGA

Why doesn't auto start turn on the heated seats and steering wheel? An annoying nit in an otherwise splendid sedan.

JULI BURKE

Enjoy the quick, powerful engine. Despise CUE. Case closed.

DAVE BEARD

Collision alert had a few miscues. Roadkill set it off once.

ERIC TINGWALL

If you thought CUE was bad, try using it while wearing gloves.

K.C. COLWELL

My 75-year-old father-in-law loved it. "You got a turbo in that?"

ALEX STOKLOSA

I love the engine note, which has the perfect combination of growl and volume.

DANIEL PUND

Insanely small side mirrors on this compared with the elephant ears on European cars.

V-8 is rheostat smooth, making it easy to dial up precisely the output you demand. The Cadillac, on the other hand, tends to answer middling throttle prods with a slightly embarrassing American boisterousness. Give it half-throttle, and the engine responds as though you've floored it. The transmission, too, tugs on the reins, effecting seamless handoffs from ratio to ratio under full throttle but not chilling out quite enough under partial juicing. With all but the lightest throttle applications, shifts are surprisingly harsh. We also noted a disconcertingly rough idle, particularly when the engine was cold, though the ECU was never so bothered by it to throw any trouble codes.

And yet, we did find ourselves at the dealership early on. Just 8700 miles into the CTS's stay, a front-end rattle sent us to the service desk. Technicians found prematurely worn anti-roll-bar end links, which they replaced under warranty. Cadillac's Premium Care Maintenance program covered our five oil changes and inspections, but it doesn't cover things such as wiper blades (\$48) or a wheel alignment (\$90).

Tires were a bigger problem. We replaced the fronts after rolling 15,216 miles and the rears shortly thereafter [see photo, page 071], for a total cost of \$1407, but someone else's tire cost us even more. At 27,560 miles, the Vsport got slapped in the face by a chunk of estranged truck tread, prompting \$5971 in repairs and a lecture from Alterman on appropriate following distances. Included in the bill: a new hood (\$895), bumper cover (\$595), headlight assembly (\$1250), and driving light (\$238).

The BMW of Cadillacs

Cadillac has decided that in order to be seen as equal to the German luxury brands, it must size and price its products accordingly. To that end, the third-gen CTS sedan takes direct aim at the Teutonic triumvirate of Audi A6, BMW 5-series, and Mercedes-Benz E-class. But in Vsport trim, the CTS is pretty closely matched with the one-size-smaller BMW M3.



BMW M3



Cadillac CTS Vsport

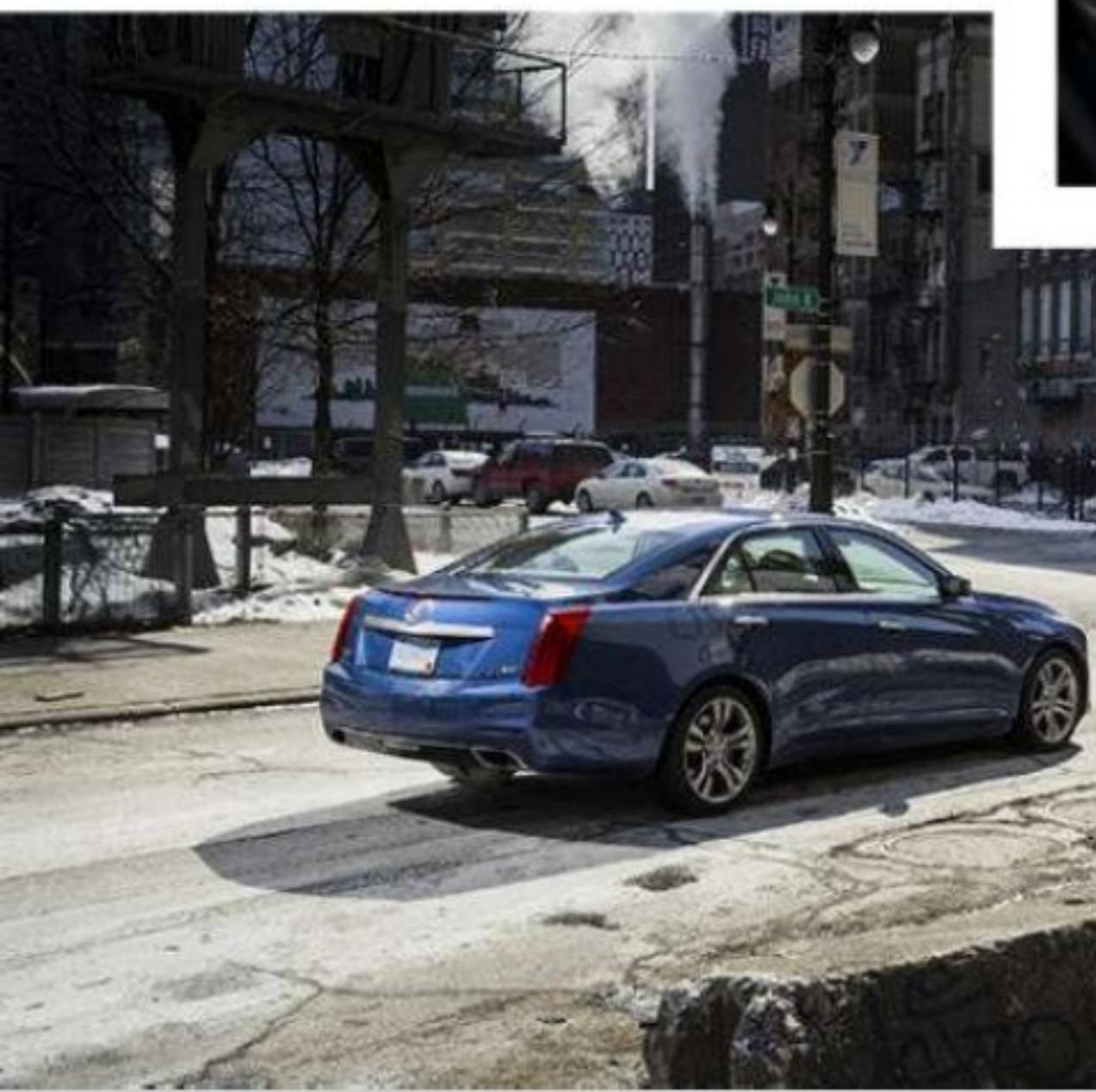
Base price	\$65,850	\$59,995
Curb weight	3613 lb	3998 lb
Power	425 hp @ 5500 rpm	420 hp @ 5750 rpm
Torque	406 lb-ft @ 1850 rpm	430 lb-ft @ 3500 rpm
Transmission	7-speed automatic	8-speed automatic
Zero to 60 mph	3.8 sec	4.6 sec
Zero to 100 mph	8.5 sec	11.0 sec
1/4-mile	12.0 sec at 119 mph	13.1 sec at 110 mph
Top speed	163 mph	171 mph
Braking, 70-0 mph	153 feet	155 feet
Roadholding, 300-ft-dia skidpad	0.99 g	0.95 g

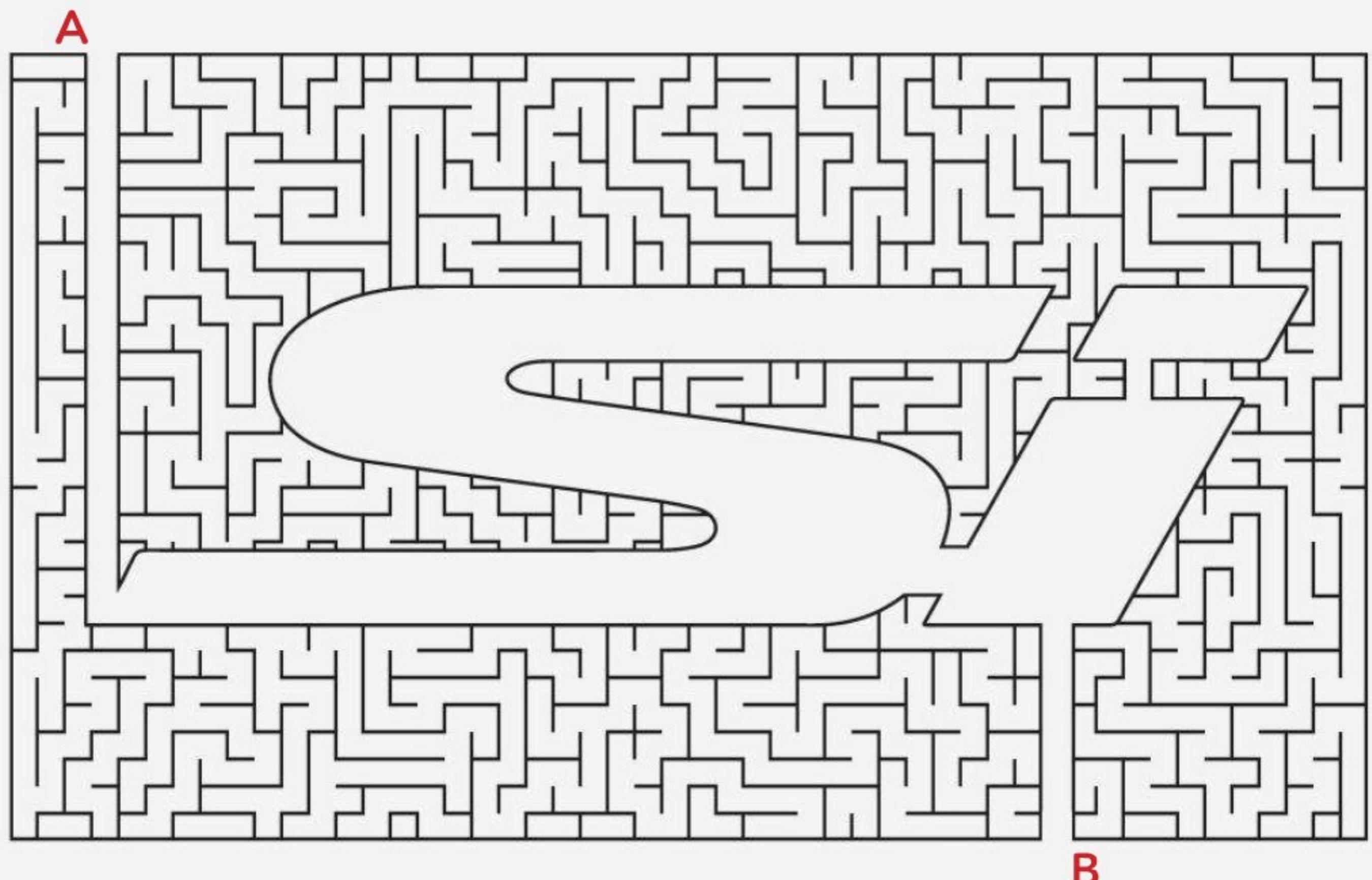
Then, at 37,070 miles, replacing a cracked windshield appropriated another \$673 from our Save the Manuals! super-PAC fund.

We would pay for CUE, Cadillac's deservedly maligned infotainment system, with our patience. Rarely has anything

 We never warmed to the CUE infotainment system. We like the CTS's sophisticated styling, but it makes the wheels look small.

inspired such universal loathing among our staff. Prior experience told us that we would be searching to find nice things to say about it, but we didn't realize what a futile effort that would be. If you start with contempt, what does familiarity breed? In our case, it was lots of red-faced moments at the wheel and solitary screaming. We may have appeared to other motorists to be





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CIVIC Si

. long-term test

anger-management candidates, furiously mouthing obscenities, but that's only because in the presence of CUE, well, we were. Its slow reaction time, confounding menu structure, and distracting touch-screen interface were only the beginning.

We posit that CUE was conceived on a preliminary expedition to New York—it's so cosmopolitan, it can't be bothered with middle America. On two separate Midwestern excursions, it lost track of where it was, once believing the highway we were on to be nonexistent, showing the car in the middle of a field for a good half-hour. And in Michigan's upper peninsula, it routinely overestimated travel times by absurd intervals, sometimes by a factor of two. It was also unaware of many roads, or was aware of them but didn't realize they were one-way. That last one is a potentially catastrophic oversight, unacceptable now that we're a good decade beyond that type of mistake being commonplace. Sure, CUE makes for a sleek dash design, but form

over function on this scale should be a cardinal sin—well, unless you're Apple. Pointing out how the "back" button moves around the screen depending on which menu is displayed, features editor Jeff Sabatini noted, "This is Interface Design 101 stuff, and GM has completely failed."

And yet, we can forgive the inordinate annoyance triggered by these features in the grand scheme of things. Cadillac has spent the last 13 years making steady and marked improvements to the CTS, and we have rewarded the car with a spot on our 10Best list seven of those years. This latest version is so good at its core, delivering outsized and increasingly rare doses of driver engagement and satisfaction, that we found ourselves liking the car more and more as the miles piled on. Oddly, fewer and fewer buyers seem to realize how good the CTS is. In 2014, this best-ever CTS hit an all-time low—just 31,115 sales.

Here's the thing about that New York move: It won't be all of Cadillac. Executives and marketing people are going to the Big Apple to immerse themselves, as GM says, "in a premium lifestyle." But engineering and product development will remain in the Detroit area. So the people who have been responsible for making the CTS great will keep at it, while the ones responsible for telling people how great it is are heading east.

Detroit has always been a city of doers, New York a city of gabbers. Maybe this arrangement will work out after all. □

★ FLEET FILES



▲ 2015 BMW M3

9391 MILES

21 OBSERVED MPG

The sticker on our M3 is \$81,425, which includes \$18,475 of options. An automatic transmission is not one of them. Would we miss the M carbon-ceramic brakes (\$8150), 19-inch wheels (\$1200), M adaptive suspension (\$1000), or the Yas Marina Blue paint (\$550)? Had we not ordered the car this way it might not pull 1.01 g's on our skidpad or stop from 70 mph in 157 feet, and it surely wouldn't be as pretty. But a \$62,950 "stripper" would still hit 60 mph in the 4.0 seconds we managed. That's two-tenths behind the dual-clutch version, fragments of a second that will be missed by no one.



▲ 2015 MAZDA 3 S

4430 MILES

27 OBSERVED MPG

The 3's second 10Best award finally convinced Mazda's home office that we were serious, and we took delivery of a 3 s Grand Touring hatchback in January. The s brings the 184-hp 2.5-liter four-cylinder, while the Grand Touring package brings grown-up luxury-car stuff such as adaptive headlights, rain-sensing wipers, a head-up display, and a great navigation/infotainment system that can be controlled either via touch screen or a knob between the front seats. As expected, we're smitten by the 3's hot-hatch driving dynamics, but, for an as-tested price of \$28,510, we ought to be.



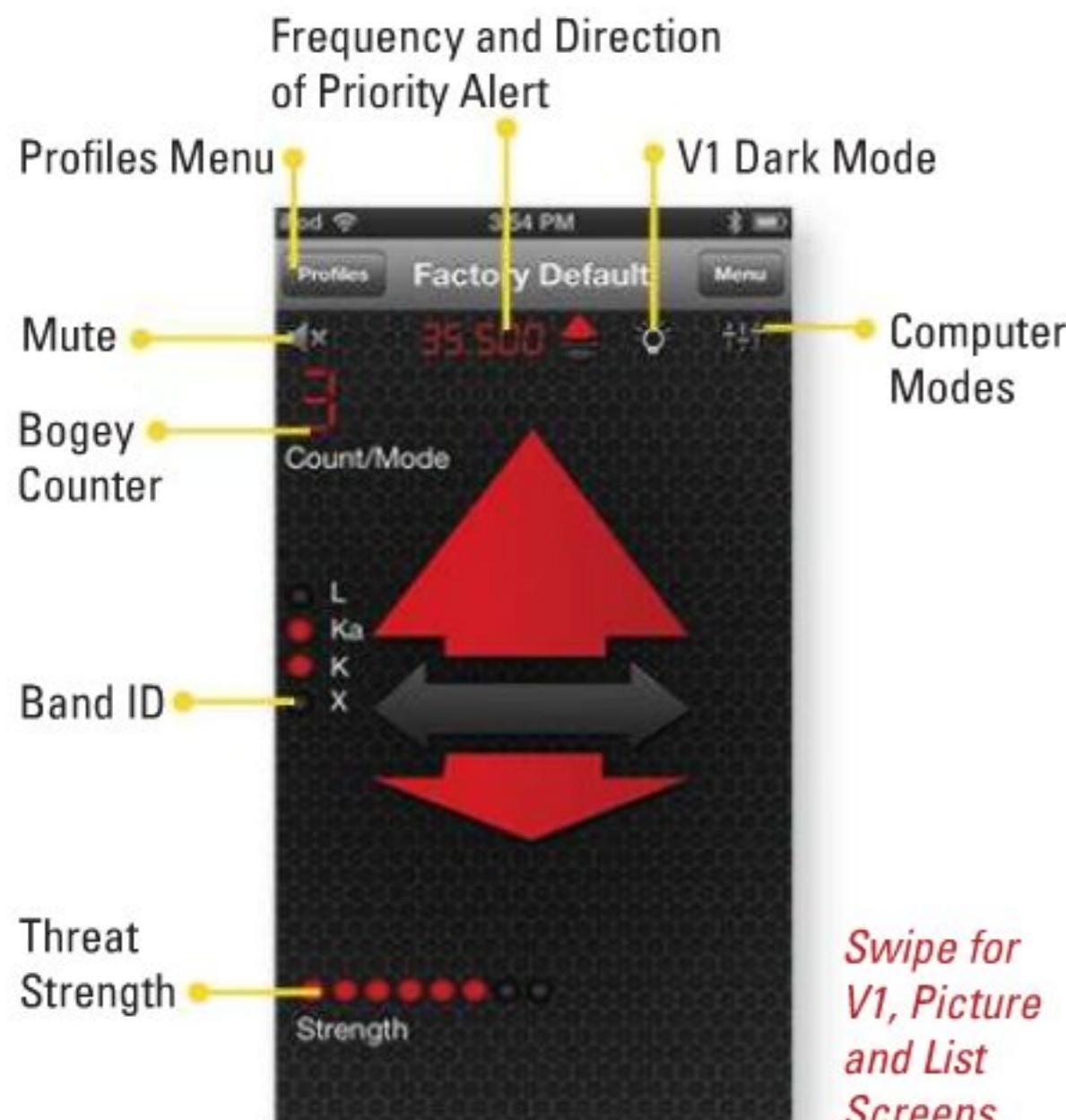
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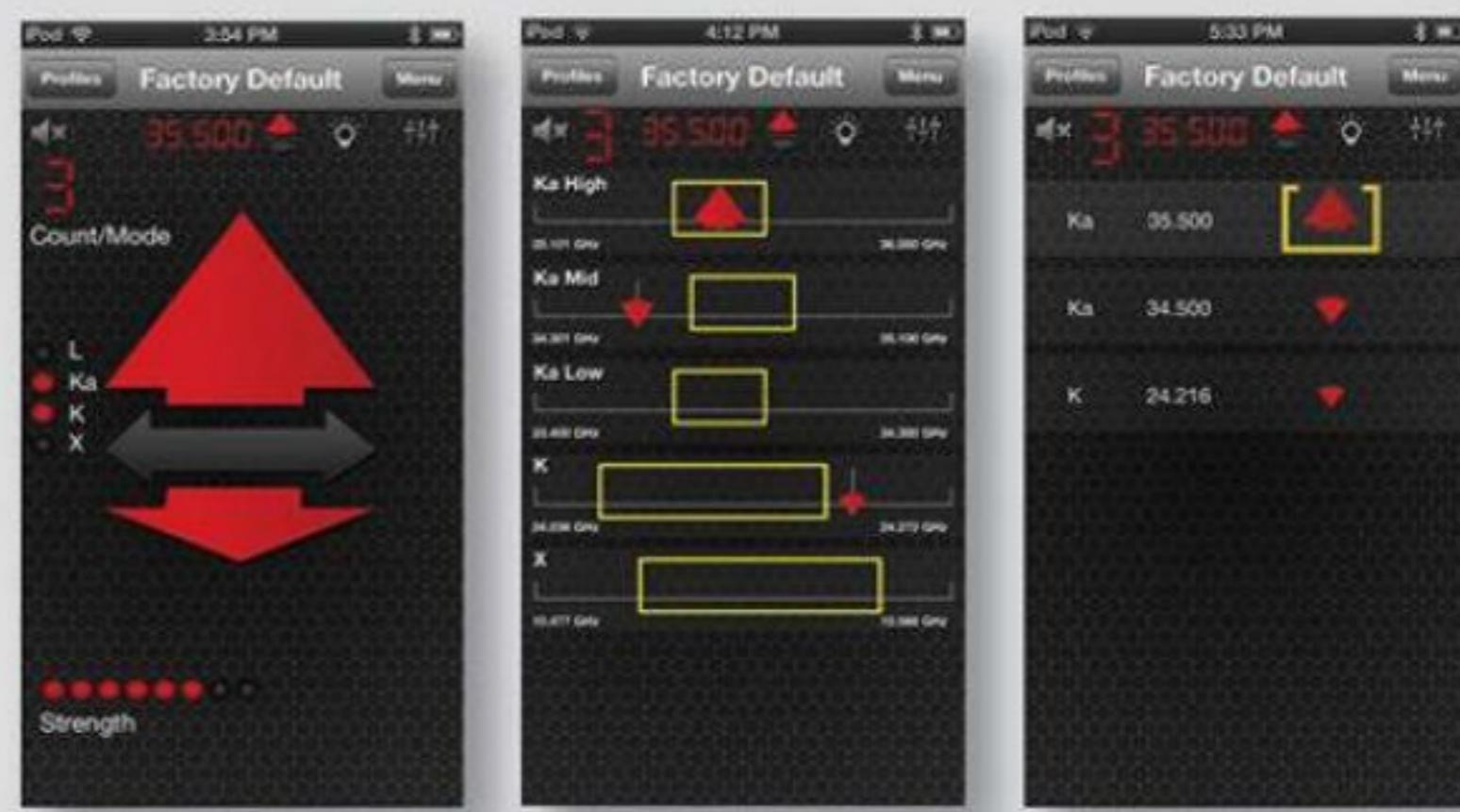
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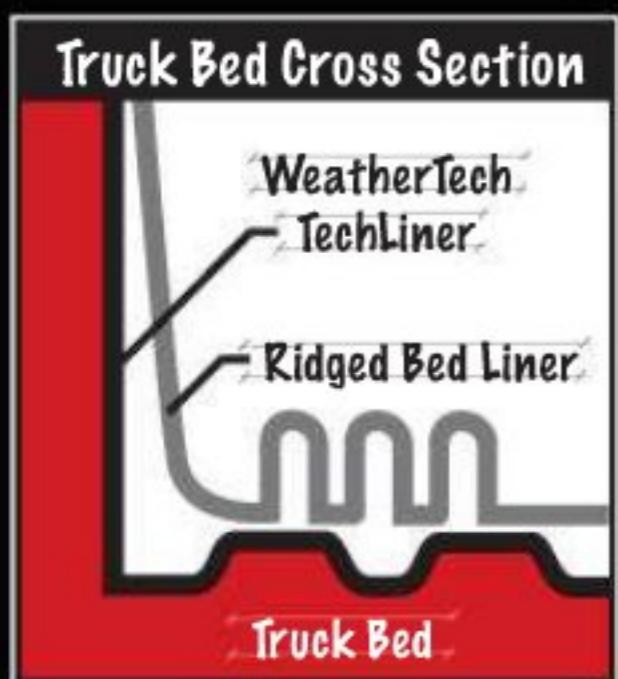


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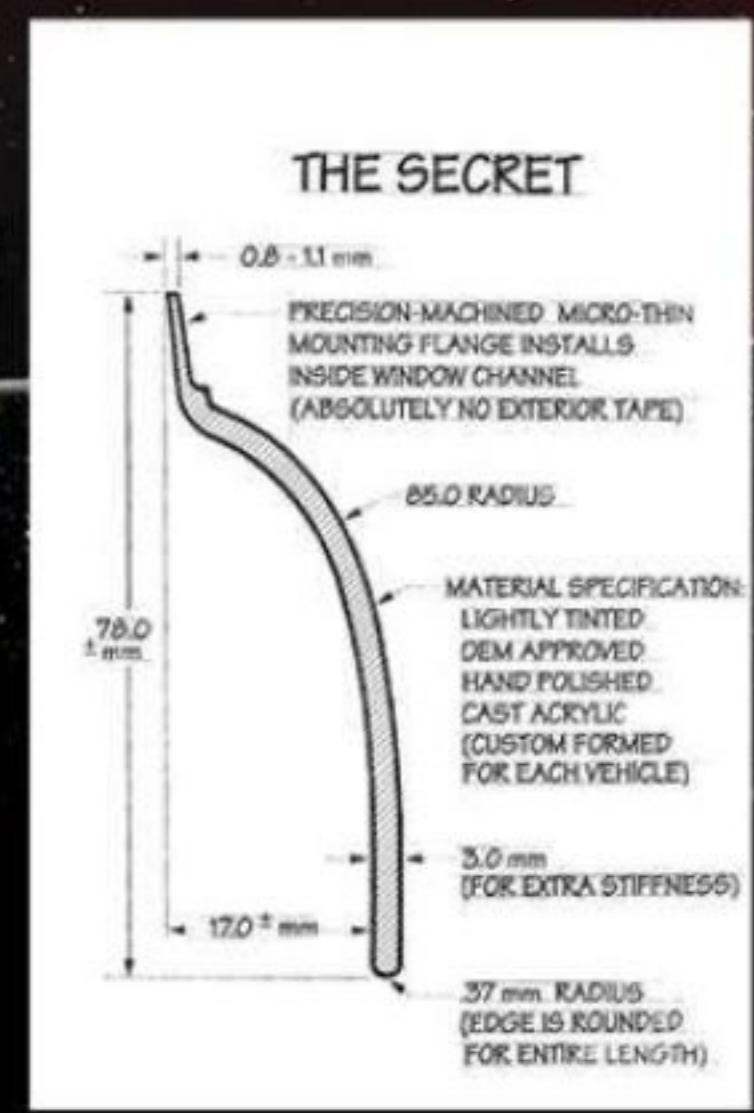
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. GODHEAD

PORSCHE CAYMAN GT4

The GT division heads down-market, but nobody's complaining. *by Mike Duff*

The Cayman GT4 does a neat trick: It is both reassuringly familiar and radically different at the same time. Nobody conversant in GT-badged Porsche 911s is going to be offended or surprised by the way it drives, or by the clinical competence with which it demolishes a racetrack. But the idea of a current GT Porsche that doesn't have its engine hung behind its rear axle goes against the norm. Then there's the \$85,595 price, batshit money for a Cayman, yet the cheapest GT Porsche ever.

That the GT4 exists at all is because Porsche gave it an engine from the mainstream side of the business. In this case, it's the 3.8-liter flat-six from the 911 Carrera S; it saves Porsche enough money to give the Cayman a proper GT-spec suspension. The engine has been turned back-to-front and gets a new induction system, but otherwise, apart from a lightened flywheel and a slightly reduced power output (385 horses), it's unchanged. Meaning that it lacks some of the high-revving *Götterdämmerung* of the GT3.

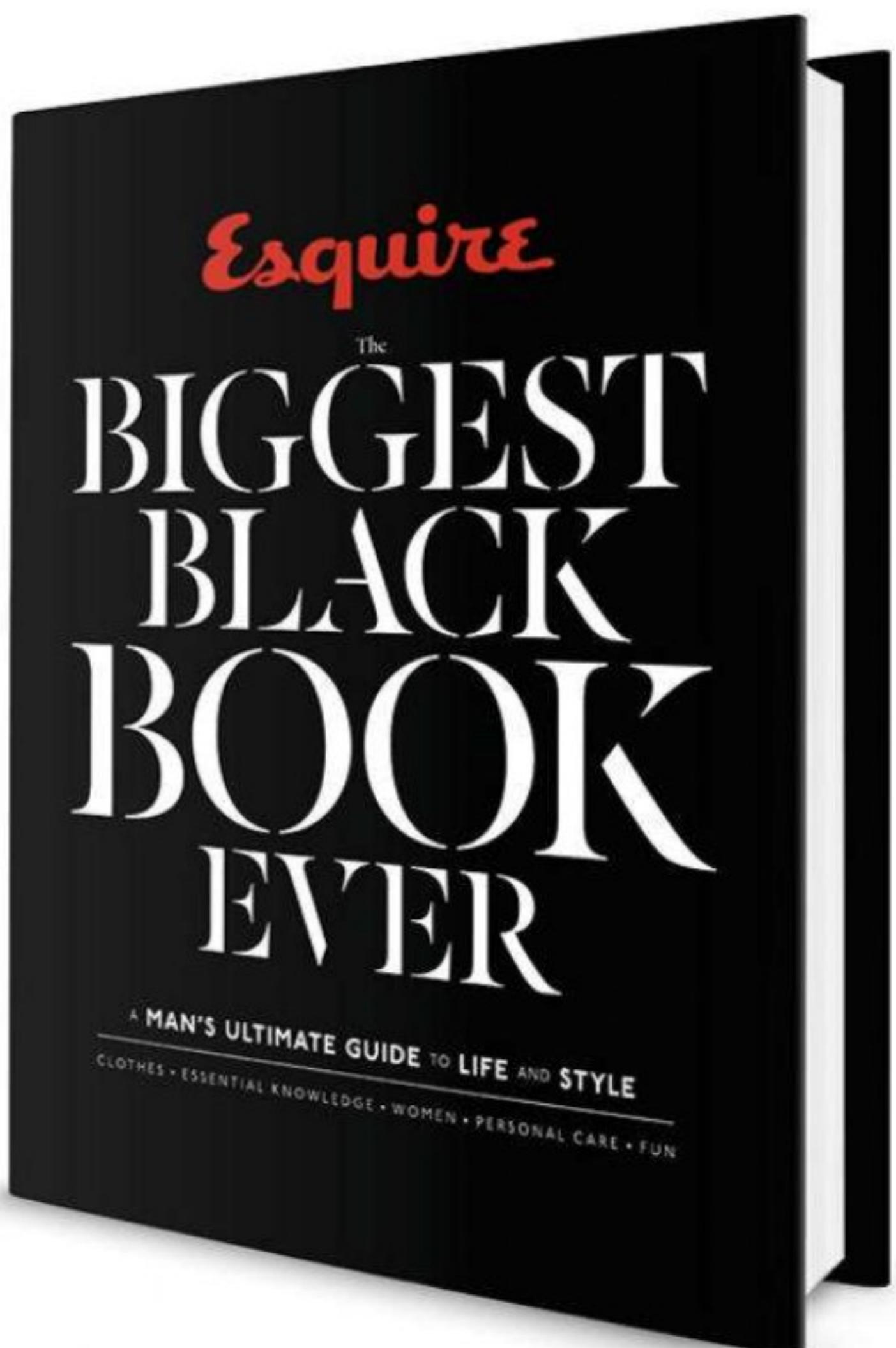
You'd struggle to improve on the rest of the mechanical specification, though, from the welcome presence of a six-speed manual gearbox as the sole transmission choice to a suspension that's mostly been pilfered from the 991 GT3. The Cayman uses its big sister's steering rack, hub carriers, and shim-adjustable control arms, while the rear suspension is similarly butched up with ball-jointed strut locators. The track-biased Michelin Pilot Sport Cup 2s were developed expressly for the GT4, and the aerodynamic kit—it replaces the standard Cayman's pop-up spoiler with a vast carbon-fiber wing—generates positive downforce. The GT4 is a parts-bin special but, oh, what a bin.

Porsche took us to Portugal to drive the GT4, the better to experience it (and its aggressive tires) in warm, dry condi-

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tions. The PR guys booked exclusive use of the very impressive, if little used, Autódromo Internacional Algarve in Portimão for the occasion, but it was the lightly trafficked inland roads that delivered the biggest revelation.

Because at vaguely normal speeds, the GT4 does a remarkable impression of the 991 GT3. The mid-engined Cayman's center of gravity sits farther forward than the 911's, but with so much mechanical grip at road velocities, the only tangible difference between the two is the Cayman's smaller size, which makes it better suited to tight-fitting roads. The steering responds pretty much identically to the GT3's—not too heavy, with a strong caster feel that supplies a sense of the forces acting on the front tires, and which snaps the wheel straight the moment you let go. The electric-power-steering assist is retuned to GT3-spec and delivers far more information than Porsche lets through in its regular cars.

Against all that, the engine is a slight disappointment. And we stress slight. The GT4 pulls harder than any other Cayman, sounds great while it does so, and delivers the sort of perfectly proportional throttle response that vindicates the decision to stand against the industry's rising tide of turbocharged powerplants. But although it has plenty of mid-range punch, the GT4 doesn't have the GT3's enthusiasm for revs. The Cayman's power cutout arrives at 7800 rpm, impressive by modern standards but pretty much exactly where the GT3's engine starts to do its best work.

The sweet-shifting manual 'box delivers plenty of compensation. The engineering team acknowledges that acceleration is not as quick as what a PDK would have provided, but on first impression we'd say that it's at least 400 percent more involving over a demanding road, although, as with all Porsches, the gearing is still toweringly tall (second runs out at 82 mph). Sport mode also brings a rev-matching function if you're not willing or able to do your own heel-and-toe downshifts.

Predictably, the rest of the GT4 is far

harder edged than even the Cayman GTS. The car we tested had optional fixed-back carbon-fiber bucket seats that, although supportive, squeeze more inappropriately than intimately after a couple of hours. And the suspension never feels anything but firm, even with the switchable dampers in their default (softer) setting. The upside is commanding body control over broken road surfaces. And, to be honest, if you're looking for ride comfort, this probably isn't the rig for you.

Portimão's designers cleverly laid out the track to deliver big surprises—although none was as large as the one handed to the taxpayers who helped fund



▼ SPECIFICATIONS

VEHICLE TYPE:	mid-engine, rear-wheel-drive, 2-passenger, 2-door hatchback
BASE PRICE	\$85,595
ENGINE TYPE:	DOHC 24-valve flat-6, aluminum block and heads, direct fuel injection
DISPLACEMENT	232 cu in, 3800 cc
POWER	385 hp @ 7400 rpm
TORQUE	309 lb-ft @ 4750 rpm
TRANSMISSION:	6-speed manual
DIMENSIONS	
WHEELBASE	97.8 in
LENGTH	174.7 in
WIDTH	71.5 in
HEIGHT	49.8 in
PASSENGER VOLUME	50 cu ft
CARGO VOLUME	15 cu ft
CURB WEIGHT	3000 lb
PERFORMANCE (C/D EST)	
ZERO TO 60 MPH	3.8 sec
ZERO TO 100 MPH	8.5 sec
1/4-MILE	12.0 sec
TOP SPEED	183 mph
FUEL ECONOMY (C/D EST)	
EPA CITY/HWY	18/23 mpg

the construction of this vast *elefante branco*, which hosts little more than a single round of the Superbike World Championship when not being used by manufacturers or for track days. The course features punishing combinations of corners and crests, several of which leave you facing an empty horizon with nothing but

← Left: The GT4 revs high, but not, y'know, GT3-high. Bottom left: Custom Michelin Pilot Sport Cup 2s are 245/35ZR-20s in front.



the knuckle-whitening hope that you'll probably find the apex if you keep on going. It's also immediately clear that the GT4 is in its natural environment here.

Most of what we learned on the road stays true at the circuit. The Cayman's steering remains deadly accurate, the car's resistance to understeer near total. Even Portimão's longer straights don't make the GT4 feel in any way slow, and the gearbox seems to work even better under pressure.

But the higher loadings of track use also bring out a different side of the GT4's character. It starts to feel mid-engined, in the same way you only realize how much mass the GT3 carries at the back when you really waterboard it. The mid-engined car turns in more keenly than the 911 and feels more stable under hard braking. The flip side is that it lacks its big-assed sister's traction out of turns and the ability to use that rear-mounted mass to deliberately mess with your cornering line. The GT4



still likes to party, but it is a less demanding car to drive hard—it's not at all scary at the limit, even with the stability and traction controls switched off. Grip fades progressively; slides can be corrected or extended. It's a dynamic canvas on which you can paint pretty much whatever picture you'd like. In rubber and brake dust.

Despite its bargain pricing (for a Porsche, at least), the GT4 doesn't feel

↓ Unlike the PDK-only 911 GT3, the Cayman GT4 is offered exclusively with a manual. This'll hurt its 'Ring time, but we don't care.

junior to the GT3. In real-world performance terms, we suspect it's not, although Porsche quotes a respectful 15-second difference between the Cayman's 7:40 Nordschleife time and the GT3's 7:25 (the 911 set its time with both active rear steering and a PDK transmission). Porsche's rationale, we suspect, was to make the Cayman GT4 a fairly potent gateway drug, designed to introduce a whole new generation of potential junkies to one of the most exciting—and expensive—automotive addictions out there: Porsche GTs.



090

06.2015

. drivelines . HATCHBACK

FORD EDGE

Did you like the old one? Then you'll like this one.
by Jeff Sabatini

Have you driven a Ford lately? Any Ford? Then you'll probably spot something familiar in the 2015 Edge. The mid-size crossover's product-development team appears to have gone around Dearborn systematically looking for contributions from its cohorts, stone-soup style. The Escape's influence shows in the Edge's sculpted sides and straked hood, while the grille looks borrowed from a Taurus. The instrument panel and switchgear were taken directly

from the corporate larder, and the door inserts could have been poached from a Mustang. The Edge's new top-of-the-line engine comes courtesy of the F-150, while the Fusion's CD4 platform underpins it.

Higher-quality finishes abound, most noticeably in the interior. But nothing will be so unfamiliar to previous Edge owners that they'll think there was a screw-up at the dealership and they somehow bought a Ford and got a Bentley. The Edge continues as a five-seater, offered at the same \$28,995 base price as last year, while Ford's marketing team still directs third-row seekers to its Explorer.

Three powertrain choices are offered again—a turbo

↓ Inside and out, the all-new Edge is a bit sharper: MyFord Touch now has real buttons, and the ute looks as if it's lost weight. It did, though it's still a two-tonner.

▼ SPECIFICATIONS

VEHICLE TYPE:	front-engine, front- or 4-wheel-drive, 5-passenger, 4-door hatchback
BASE PRICE	\$28,995-\$40,490
ENGINES:	turbocharged and intercooled DOHC 16-valve 2.0-liter inline-4, 245 hp, 275 lb-ft; DOHC 24-valve 3.5-liter V-6, 280 hp, 250 lb-ft; twin-turbocharged and intercooled DOHC 24-valve 2.7-liter V-6, 315 hp, 350 lb-ft
TRANSMISSION:	6-speed automatic with manual shifting mode
DIMENSIONS	
WHEELBASE	112.2 in
LENGTH	188.1 in
WIDTH	75.9 in
HEIGHT	68.6 in
PASSENGER VOLUME	114 cu ft
CARGO VOLUME	39 cu ft
CURB WEIGHT	3950-4350 lb
PERFORMANCE (C/D EST)	
ZERO TO 60 MPH	6.7-7.5 sec
ZERO TO 100 MPH	18.8-24.5 sec
1/4-MILE	15.3-16.1 sec
TOP SPEED	115 mph
FUEL ECONOMY	
EPA CITY/HWY	17-20/24-30 mpg

four and two V-6s, with front- or four-wheel drive available—but the engine hierarchy is new. Last year's base mill, the naturally aspirated 3.5-liter V-6, is now a \$425 option. A new iteration of Ford's EcoBoost 2.0-liter four, a \$995 upcharge last year, is now standard. For the first time, the four-cylinder is available with four-wheel drive and an optional tow package.

This standard EcoBoost engine, a first for Ford, seems a generous gesture, but the corporate accountants approve, too. Ford tells us it has been selling roughly 10,000 Edges each month, some 84 percent with the 3.5-liter V-6 and just 8 percent with the old EcoBoost four, which was built overseas in a capacity-constrained plant. In



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this new generation of Edge, 40 percent are expected to be four-cylinders as Ford is now building the engine in Cleveland rather than Spain, freeing up availability and cutting costs. And since Ford figures that 46 percent of buyers will pay for the 3.5-liter V-6, the upsells will generate 2.5 times the additional revenue as in the past.

The overhauled four features a twin-scroll turbocharger, which helps produce 245 horsepower, a 5-hp gain over last year's 2.0-liter EcoBoost. Though Ford doesn't slap a Premium Fuel Required sticker on the filler door, power ratings for its EcoBoost engines come from using 93-octane gasoline, and customers who do not pump it will be making do with slightly less horsepower. So, too, will buyers of the optional 3.5-liter, as this V-6 takes a 5-hp hit. It now makes 280 horses.

The Edge Sport continues into this generation, losing a liter of displacement and gaining two turbos. It is now fitted with the first transverse application of the F-150's EcoBoost 2.7-liter V-6, exclusive to the Sport trim and rated at 315 horsepower and 350 pound-feet of torque. Sport models also get monotube rear shocks, a dis-

↑ The Edge steadfastly remains a two-row SUV, but it's been let out in its wheelbase and overall length for more interior volume.

tinct front fascia, and stiffer springs and anti-roll bars. It starts at \$38,995 and can push past \$45,000 if you load it up.

That's easy to do, as Ford offers nearly every feature and technology at its disposal here. All Edges employ a six-speed automatic updated with steering-wheel-mounted paddle shifters and a sport mode. Optional advanced safety equipment includes blind-spot monitoring, cross-traffic alert, adaptive cruise control with lane-keeping assist, inflatable rear seatbelts, and a 180-degree front-view camera. Ford's parking-assist technology will not only parallel-park your Edge for you, it will also pull you out of the space. You can even have the system back your vehicle into a perpendicular spot, if you've officially given up on using the gifts of human functioning to perform even the most rudimentary of tasks.

MyFord Touch also lingers on the options list. As in other new Fords, its capacitive-touch controls have been pared in favor of two neat rows of little round

buttons, but the underlying technology is the same as it ever was. Edge shoppers who want Ford's promised-to-be-improved Sync 3 system, which runs new software with an entirely different graphic interface, might wait and see whether it appears in the 2016 model coming this fall. As Sync 3's new software also requires new hardware, it will be incompatible with vehicles delivered with MyFord Touch, and no upgrade will be available. Ford says it will start rolling out Sync 3 later this year.

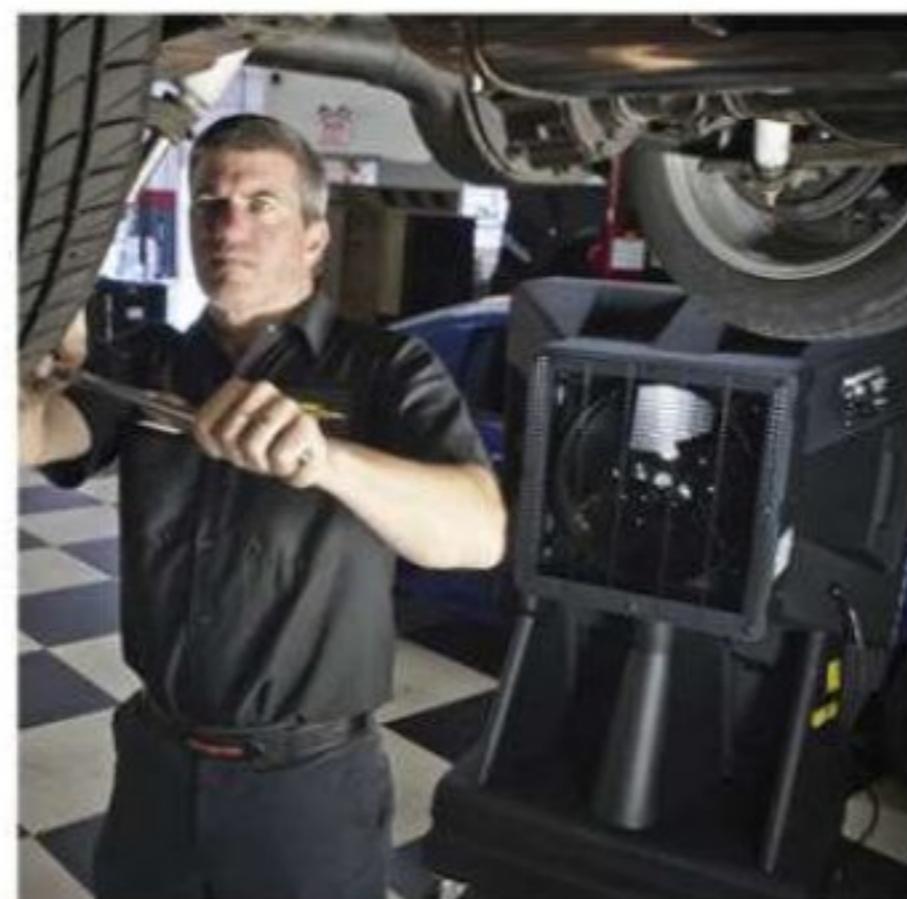
The Edge drives much like the Fusion, with which it shares its front-strut and rear-multilink suspension design. Its steering is light and quick, creating the impression of vehicular smallness, at least until cornering forces build. The wheelbase has grown an inch to 112.2, matching the Fusion's, while an additional 3.9 inches of length over last year's model gives the new Edge more passenger and cargo volumes. Aluminum lower control arms and more high-strength steel help drop the curb weight on most models, although all but the most basic Edge will still top two tons. That mass, however, is well controlled, and the Edge delivers a plush ride.

The twin-turbo 2.7-liter in the Sport is a worthy replacement for the old naturally aspirated 3.7-liter. It even sounds the part, the only one of the three engines whose exhaust and intake notes do much to penetrate the quiet cabin—in part because they're pumped through the audio system. At the other end of the spectrum, acceleration from the four-cylinder remains adequate but unimpressive. While it does offer a 3-mpg improvement in EPA combined fuel economy compared with either of the V-6 engines, our experience shows that turbocharged, small-displacement engines are thirstier in the real world. The 3.5-liter V-6 offers better throttle response and more-linear power delivery and seems like \$425 well spent, especially compared with the much higher cost of the Sport.

The Edge looks and feels more refined, and the new equipment might be enough to keep buyers interested. Yet these updates seem more about putting the Edge back on par with the rest of Ford's contemporary lineup and creating manufacturing synergies than breaking new ground. Taken as a whole, the new Edge hews closely to the old one. This isn't a bad thing any more than the old Edge was a bad vehicle—quite the contrary. But for a bottom-to-top redesign, we were expecting more. This Edge seems to abut a plateau.

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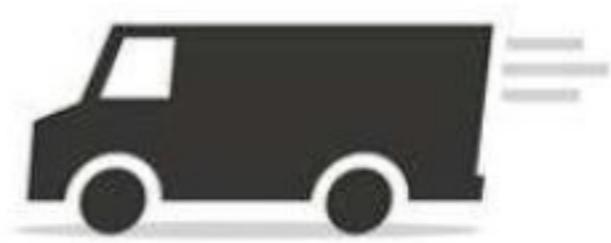
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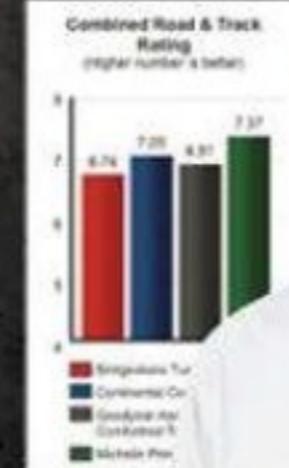
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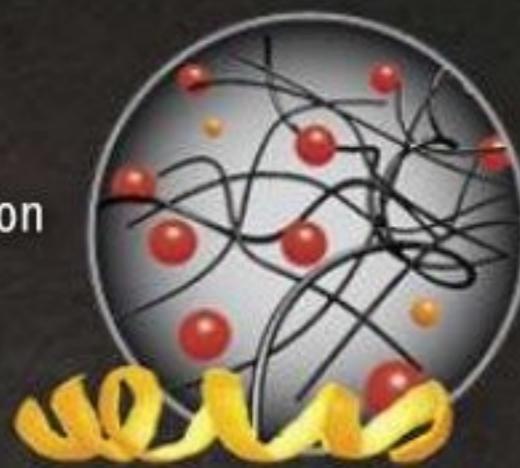


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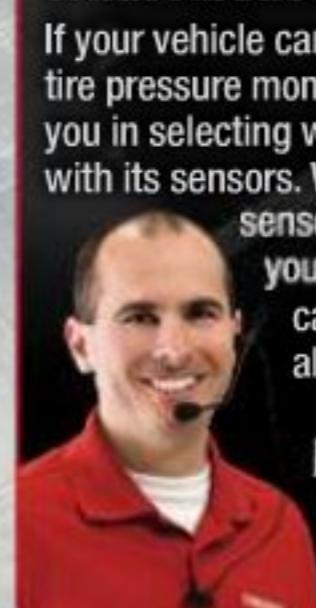
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FERRARI CALIFORNIA T

TESTED Refined and linear turbo power, more of a Ferrari yet still daily-driver practical. The \$1500 options are the cheap ones, small annoyances not found in a Hyundai. *by Aaron Robinson*

Suntanned California has always been a place where people come to experiment with their identity. Thus, the name is perfect for Ferrari's lowest-priced model, which has been an experiment since it first hit the streets in 2009. It was the first roadgoing Ferrari to put a V-8 in front of its driver and the first with a power-retractable hardtop, and its price and daily practicality took Ferrari on a low pass through the market. It probably should have been a Maserati, as it would have done far more to elevate that brand than it does for Ferrari, but the ball didn't bounce that way.

Secretive Ferrari won't say how the California sells, but judging by the plethora of low-mileage examples parked on eBay with heavily depreciated prices, the market is perhaps lukewarm. The revamped California T—just 14 seconds turns this well-insulated hardtop coupe into a convertible—fixes what may have gone wrong with the old model, including a challenged power-to-weight ratio and styling that

evoked a pouting teenager more than the snarling stallions of Maranello.

The T stands for turbo, of course, and in this regard the California, with its twin compressors hanging from a smaller 3.9-liter V-8 with a signature flat-plane crankshaft, is being experimental yet again. This is the first forced-induction street Ferrari since the F40, and so it is the path-finder for the many turbocharged Ferraris to come, starting with the 488GTB, set to arrive early next year.

The new sheetmetal picks up themes from the F12berlinetta, replacing the soft roundness and elliptical headlights with Ferrari's newer angular look. That includes more scalloping for ducts and vents, and the droopy black inset panel in back is gone and unlamented, as are the silly stacked pipes that helped heighten the car's already-tall tush and give it a fake, forced showiness.

The new car's sleeker form can't hide the fact that it's a big machine, being three full inches longer than a Chevy Corvette



↑ Top: Strange that this Ferrari has had liposuction and a butt reconstruction because work like that is a rarity in California.

Stingray, as well as a bit wider, a bit taller, and way heavier at 4064 pounds. Even so, that's 59 pounds lighter than our last California tester, and there's 101 more horsepower and 199 more pound-feet of torque to motivate it. Hence, the 60-mph sprint plunges from 3.9 seconds to an astonishing (really, almost unbelievable) 3.3, with a full second knocked off the quarter-mile. And a 0.95-g skidpad performance means there's more grip to go with the extra kick.

▼ SPECIFICATIONS

VEHICLE TYPE:	front-engine, rear-wheel-drive, 2+2-passenger, 2-door convertible
PRICE AS TESTED	\$268,761
BASE PRICE	\$202,723
ENGINE TYPE:	twin-turbocharged and intercooled DOHC 32-valve V-8, aluminum block and heads, direct fuel injection
DISPLACEMENT	235 cu in, 3855 cc
POWER	552 hp @ 7500 rpm
TORQUE	557 lb-ft @ 4750 rpm
TRANSMISSION:	7-speed dual-clutch automatic with manual shifting mode
DIMENSIONS	
WHEELBASE	105.1 in
LENGTH	179.9 in
WIDTH	75.2 in
HEIGHT	52.0 in
PASSENGER VOLUME	75 cu ft
CARGO VOLUME	7 cu ft
CURB WEIGHT	4064 lb

▼ C/D TEST RESULTS

ZERO TO 60 MPH	3.3 sec
ZERO TO 100 MPH	7.1 sec
ZERO TO 150 MPH	16.1 sec
ROLLING START, 5-60 MPH	3.9 sec
1/4-MILE	11.3 sec @ 128 mph
TOP SPEED (drag limited, mfr's est)	196 mph
BRAKING, 70-0 MPH	162 ft
ROADHOLDING,	
300-FT-DIA SKIDPAD	0.95 g
FUEL ECONOMY	
EPA CITY/HWY	16/23 mpg
C/D OBSERVED	13 mpg

■ **TEST NOTES:** Sprints to 170 mph in 22.8 seconds. Launch control engages clutch at a surprisingly low rpm, presumably to ease wheelspin management.

Okay, so it's finally Ferrari-fast. But a Ferrari has always been less about numbers than about being a crackling Tesla coil spitting lightning bolts. The new direct-injection V-8 barks into combustion, and it sounds every decibel the snarling, pissed-off puma that other Ferraris do. Hidden exhaust flaps somewhere under the car flutter as necessary to uncork and recork the growling on cue.

A Ferrari throttle has always given you precisely what you want, and the California T is, blessedly, no exception. Mat it to elicit the telltale wheeze of the turbos. As the boost builds to its 18.9-psi peak, the revs and power ramp up, but only with the slightest of kinks to the dyno trace. The redheaded V-8 delivers the goods with almost, if not quite, the organic smoothness of the Ferraris in Fangio's day. It gathers speed in any gear and with haste proportionate to the pedal squeeze. The lag is short and glossed over, the V-8 just going when you ask it, exactly at the speed you ask of it. That bodes well for the 488GTB and turbocharged Ferraris yet to be born.

The California also stops with ferocity, but the standard carbon-ceramic brakes proved suppler at city speeds than others we've tried, behaving like iron brakes in all the best ways. With 47 percent of its



weight on the front axle, the California T is rightly balanced and the steering reflects it, aiming the nose into corners with friction-free lubricity and a thrilling subtlety that matches the other controls.

The \$5568 you must spend for Magna-ride shocks on top of the California's \$202,723 base price is money well used. With it, the California feels as if it has yards of suspension travel over the bumps, yet restrains body roll and understeer when you're hunting apexes. Here, again, everything is served in proportion to your demand, from steering angles to ride stiffness. One of the great joys in life is piloting this (or any other) Ferrari up a slithering road, top folded, the cylinders wailing an operatic octet as the red LED lights on the steering rim flicker. Voltage? This car produces it with uranium rods.

When you buy a Ferrari, you buy tradition expressed in aromatic panels of French-stitched leather, flat and rigidly firm bucket seats, and a familiar dashboard of simple circles augmented by a few conventional display screens. It's definitely old school compared with, say, McLaren's all-suede architectural cockpits, where the touch screens and buttons seem designed in the Infinite Loop. In the California T, a carbon-fiber arch dividing the center console, part of a \$7761 carbon dress-up package, is the riskiest design flourish. The rest, from the large analog tach to the data screen next to it, is Ferrari convention.

It takes time, but eventually you appreciate the California's practicality. Evoking

its many years in the F1 coal mine, the busy steering wheel is where Ferrari puts all the old stalk controls. Using the turn signals is as simple as squeezing your palm, the wiper control reduced to a single multiaction button. The *manettino* knob gives you the choice of comfort, sport, and Mamma Mia mode, which switches off all the aids. A button marked "pit speed" seems a little precious in this, the Ferrari least likely to see a track. Thoughtfully, Ferrari lets you pick sport for the throttle and transmission settings but retain the softer shock setting if your roads aren't smooth. Go forth and commute.

Unexpected conveniences: folding rear seats that reveal a tunnel into the large trunk for longer items; plenty of console clutter space; radio buttons on the back-side of the steering wheel; a USB port. Typical (for an Italian car) inconveniences: the strange infotainment unit; poor radio reception; and a single 12-volt socket far from the windshield. Next year, Ferrari finally offers keyless operation, but for now you still get the vintage red-plastic-encased key that will suitably impress the valets.

Fanatics in red jackets may look down on it, and the option pricing gets silly (21 of its 28 available colors cost \$12,486 extra), but the California T is more enthralling than its direct competitors, namely the Aston Martin DB9 and Bentley Continental GTC, and more passionate than the anodyne Porsche 911 Turbo S. It is your daily dose of Ferrari.

CHEVROLET TRAX LTZ AWD

TESTED  An attractive SUV whose size is inversely proportional to its refinement.  Slow to accelerate, lackluster fuel economy. *by Tony Quiroga*

In this episode of “Badge Engineering: GM,” the Chevrolet Trax gets the better of its Buick Encore cast-mate. Following the Encore’s lead, the Trax is Chevrolet’s entry into a new class of diminutive SUVs, one occupied by the Honda HR-V, Jeep Renegade, Mazda CX-3, and the Nissan Juke. But the Trax is more interesting than its Buick twin for two reasons. First, the Trax, with its flared fenders, doesn’t look like a chrome-laden potato. Second, Chevy charges roughly \$4000 less than Buick.

The Trax is tiny on the outside—it’s less than one inch longer than an old air-cooled Porsche 911—but remarkably spacious within. A six-foot passenger can fit comfortably behind a six-foot driver. Large doors make getting in and out easy, and the Encore’s solid structure and quiet demeanor remain. In fact, the Trax proved to be slightly quieter at 70 mph than the last Encore we tested. Chevy’s interior appointments and materials aren’t quite as

 Neither quick nor sexy, the Chevy Trax is nonetheless exactly what it appears to be: a pleasant, space-efficient transportation pod.

expensive-looking as the Buick’s, but the cabin design is clean and modern. One low point is the audio system’s touch screen. Lifted from the Chevy Sonic, the screen is irritatingly slow to respond.

We’d also like a bit more speed from the powertrain. As in the Encore, the Trax gets a 1.4-liter turbo four with 138 horsepower and 148 pound-feet of torque channeled through a six-speed automatic. Acceleration is tepid, turning downright cold with passengers and cargo aboard. Equipped with four-wheel drive, our LTZ-spec Trax hit 60 mph in 9.4 seconds. There’s no getting around it: The Trax is slow. Get used to flooring the pedal. A lot. We did, and traveled 23 miles on a gallon of regular. That’s shy of the 24-mpg city figure quoted by the



▼ SPECIFICATIONS

VEHICLE TYPE:	front-engine, 4-wheel-drive, 5-passenger, 4-door hatchback
PRICE AS TESTED	\$27,405
BASE PRICE	\$27,405
ENGINE TYPE:	turbocharged and intercooled DOHC 16-valve inline-4, iron block and aluminum head, port fuel injection
DISPLACEMENT	83 cu in, 1364 cc
POWER	138 hp @ 4900 rpm
TORQUE	148 lb-ft @ 1850 rpm
TRANSMISSION:	6-speed automatic with manual shifting mode
DIMENSIONS	
WHEELBASE	100.6 in
LENGTH	168.5 in
WIDTH	69.9 in
HEIGHT	65.9 in
PASSENGER VOLUME	93 cu ft
CARGO VOLUME	19 cu ft
CURB WEIGHT	3296 lb

▼ C/D TEST RESULTS

ZERO TO 60 MPH	9.4 sec
ZERO TO 100 MPH	33.6 sec
ROLLING START, 5-60 MPH	10.2 sec
1/4-MILE	17.2 sec @ 80 mph
TOP SPEED (drag limited)	117 mph
BRAKING, 70-0 MPH	166 ft
ROADHOLDING,	
300-FT-DIA SKIDPAD	0.79 g
FUEL ECONOMY	
EPA CITY/HWY	24/31 mpg
C/D OBSERVED	23 mpg

TEST NOTES: Achieve best acceleration by releasing the brake pedal with the engine at 2000 rpm and by using automatic upshifts. A heavy stab of the left pedal is necessary to initiate ABS.

EPA and well short of the 31-mpg highway number. At least the little four takes its licks without much audible protest.

And though it might not be quick, the 3296-pound Trax has a small-car tossability that we find endearing. It’s never clumsy on the road, and the quick steering fosters a deft and lively feel. Lateral grip is lacking, but body roll is well controlled and secure. We did notice that the nose dives enough to upset the Trax’s stability under hard braking. A strong leg is required to activate the ABS, but slam on the brakes with authority and the reward is a near-sports-car-grade 166-foot stop from 70 mph.

Chevy’s Trax is a no-fuss machine. Small and refined, it is a handsome entry into the burgeoning baby-ute set. Our only advice to shoppers is to avoid the top LTZ trim level. Our LTZ with four-wheel drive arrived with a \$27,405 price tag, but you could save \$2585 by opting for the mid-level LT version and forgoing the power driver’s seat, fog lights, Bose stereo, and 18-inch wheels. Now, if that \$2585 bought an extra 50 horsepower, we’d happily pay up, because there’s nothing wrong here that an additional 50 horses won’t fix.

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PORSCHE MACAN S

TESTED **Proof you don't need to blow money on interior or exterior options.** **Short on low-end power, soft brake pedal, dull steering.** *by Tony Quiroga*

Porsche doesn't make yoga pants. At least not yet. What it does make is the Macan, an Audi Q5-based crossover that slots into the lineup below the larger Cayenne. But judging by the reactions of women of a certain age to Porsche's smallest ute, the Macan might just be the vehicular equivalent of wearing tight black pants in a hot room.

The fawning isn't surprising. Porsche's newest SUV is a fairly irresistible redo of Audi's architecture. Aside from the compact size, there is no obvious visual connection to the Q5. Porsche's designers went to work inside and out, and though our test car lacked a leather-wrapped instrument panel, we didn't miss it. Alcantara and leatherette seats are standard. Skip the pricey leather options—the basic interior is excellent. Puncturing the bodywork are massive front-end vents that flow enough air to cool a Class 8 truck. A black sticker on the bottom of the doors attempts to slim the visual weight.

The actual weight for this Macan S is 4351 pounds. Moving that mass through all four wheels is a 3.0-liter V-6 armed with two turbochargers. Every Macan is turbocharged, even the S. The Macan Turbo's larger, 3.6-liter engine makes 400 horsepower, while the S gets along with 340.

Activate launch control and the Macan S will bolt to 60 in 4.6 seconds. That's the same zero-to-60 time as a 1986 911 Turbo, the quickest car we tested that year.

If you skip the launch protocol, the Macan S is slow to deliver the goods, like the 911 Turbo of yore. Meaningful thrust doesn't arrive until 4000 rpm, which is apparent in the comparatively long 5-to-60 run of 6.0 seconds. Porsche's dual-clutch seven-speed automatic shifts immediately, won't prematurely upshift when your driving gets aggressive, and mechanically links

↓ Below left: No need for pricey interior options; the base-level cabin is excellent. Below: This Macan S is technically off-road.



▼ SPECIFICATIONS

VEHICLE TYPE:	front-engine, 4-wheel-drive, 5-passenger, 4-door hatchback
PRICE AS TESTED	\$62,230
BASE PRICE	\$50,895
ENGINE TYPE:	twin-turbocharged and intercooled DOHC 24-valve V-6, aluminum block and heads, direct fuel injection
DISPLACEMENT	183 cu in, 2997 cc
POWER	340 hp @ 6500 rpm
TORQUE	339 lb-ft @ 1450 rpm
TRANSMISSION:	7-speed dual-clutch automatic with manual shifting mode
DIMENSIONS	
WHEELBASE	110.5 in
LENGTH	184.3 in
WIDTH	76.1 in
HEIGHT	63.4 in
PASSENGER VOLUME (C/D est)	96 cu ft
CARGO VOLUME	18 cu ft
CURB WEIGHT	4351 lb

▼ C/D TEST RESULTS

ZERO TO 60 MPH	4.6 sec
ZERO TO 100 MPH	12.4 sec
ZERO TO 130 MPH	25.5 sec
ROLLING START, 5-60 MPH	6.0 sec
1/4-MILE	13.3 sec @ 103 mph
TOP SPEED (drag limited)	156 mph
BRAKING, 70-0 MPH	186 ft
ROADHOLDING, 300-FT-DIA SKIDPAD	0.82 g
FUEL ECONOMY	
EPA CITY/HWY	17/23 mpg
C/D OBSERVED	15 mpg

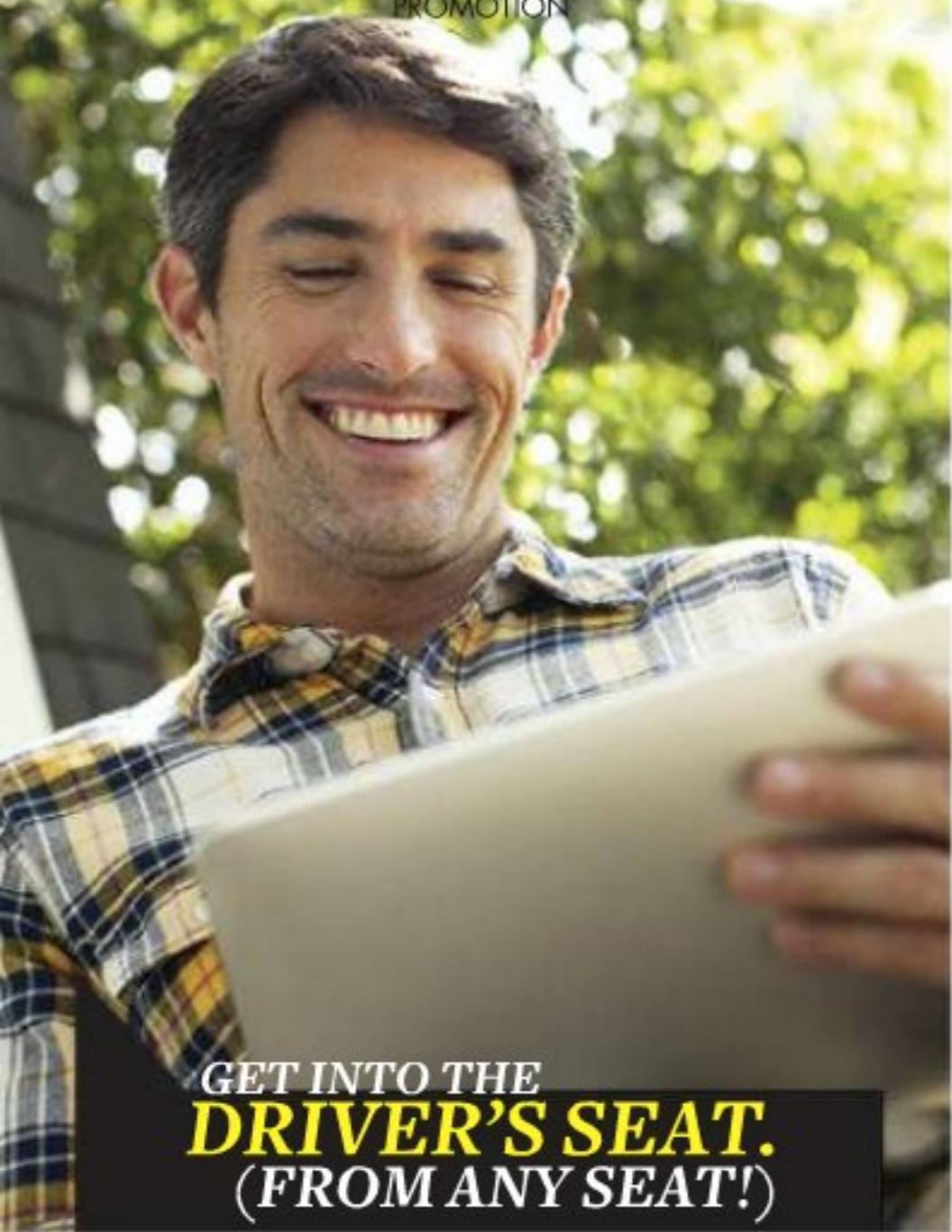
TEST NOTES: Slight brake fade, lengthy stopping distance, and modest cornering performance are disappointing for a Porsche. Decent acceleration helps some.

the Macan to the rest of the Porsche family.

The rest of the family might not recognize the Macan's numb steering, though. From the Cayenne and Panamera through the sports cars, Porsche steering is typically sharp and replete with feel. Those traits skipped this Macan S, but the all-season tires might be to blame (summer tires are a no-cost option). The mild rubber certainly contributed to the weak 0.82 g of skidpad grip and the long 186-foot stops from 70 mph. On stickier rubber, a Macan Turbo managed 0.89 g on the pad and stopped from 70 in 150 feet.

A mushy brake pedal might also get the Macan kicked out of the family reunion, and the slight fade is not in keeping with the bloodline.

Options are another Porsche tradition, but our test Macan S wasn't too extravagantly equipped. A base price of \$50,895 swelled to \$62,230 with the addition of an infotainment package, premium package, Sport Chrono package, Torque Vectoring Plus, and the adjustable air suspension. We could get by with an even more basic Macan, but what do we know? Porsche is having no trouble selling every Macan it can build. Here's something we do know: If Porsche Design started making yoga pants, it wouldn't be able to keep those on the shelves, either.

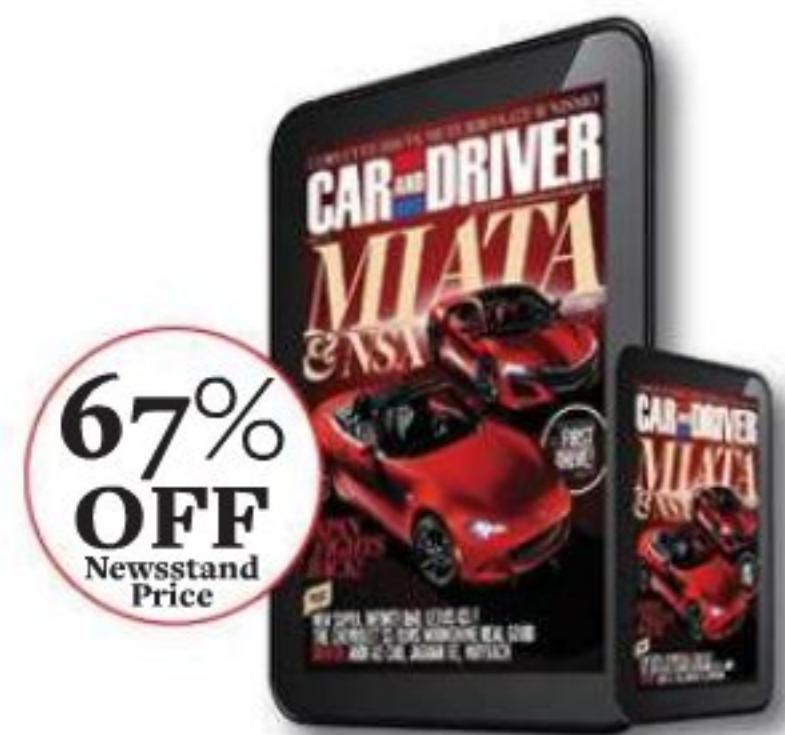


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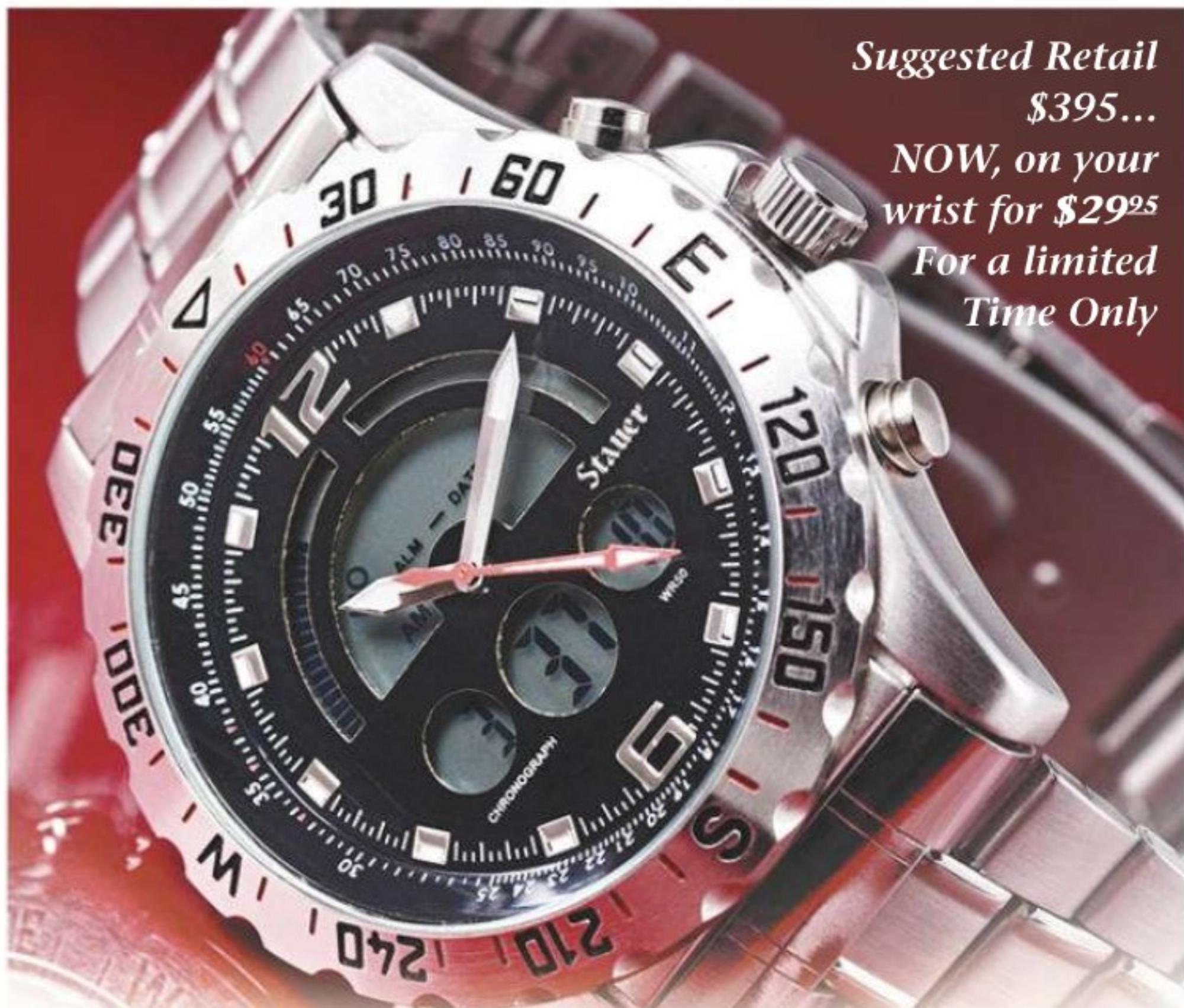
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2016 VOLVO XC90

The Chinese auto industry finally reaches America, by way of Sweden. *by Eric Tingwall*

China's first foray into the U.S. auto market won't be a farcical parade of mechanical calamities and odoriferous plastics echoing the arrival of the Koreans in the second half of the 1980s. That's because the Chinese, in addition to owning America's largest pork producer and holding \$1.3 trillion in U.S. debt, also own Volvo. By proxy, that makes this XC90—the first all-new vehicle released since Chinese carmaker Geely acquired the brand in 2010—China's premiere incursion onto our roads.

As the folks in the Volvo jackets tell it, Geely promises to play this one hands-off as long as the brand makes money, and we're inclined to believe them. The new XC90 is every bit as Swedish as we've come to expect from Volvo, down to its production location in Torslanda, which, as you probably know, is right between Hjuvik and Kvislungeby. (The first truly Chinese-made Volvo, the long-wheelbase S60L, will hit the U.S. sometime this year.)

Volvo's safety instinct also appears healthy. The company's new "Run-off Road" crash test, which propels a vehicle down into a drainage ditch before launching it airborne off the embankment of an intersecting driveway, led to the development and installation of shock-absorbing seat bottoms that reduce the forces transmitted to passengers' spines.

Without the parts bin of Ford's Premier Automotive Group, Volvo was left to develop much of the XC90 from the ground up. The three-row SUV offers all the space and amenities you find in an Audi Q7 or BMW X5, save for a rear-seat entertainment system to keep the kids quiet.

As a hedge against future gas prices and efficiency regulations, the new Drive-E engine family's biggest mill is a 2.0-liter four-cylinder. That's not much engine when you consider that the XC90 weighs

↓ The XC90 joins the new world of vehicles with fewer engine cylinders than gears in their transmissions. It doesn't always end well.

▼ SPECIFICATIONS

VEHICLE TYPE:	front-engine, 4-wheel-drive, 7-passenger, 4-door hatchback
BASE PRICE (est)	\$49,825-\$62,000
ENGINES:	turbocharged, supercharged, and intercooled DOHC 16-valve 2.0-liter inline-4, 316 hp, 295 lb-ft; turbocharged, supercharged, and intercooled DOHC 16-valve 2.0-liter inline-4, 316 hp, 295 lb-ft + 2 permanent-magnet synchronous AC motors, front: 46 hp, 111 lb-ft, rear: 80 hp, 177 lb-ft (combined system: 400 hp, 472 lb-ft)
TRANSMISSION:	8-speed automatic with manual shifting mode
DIMENSIONS	
WHEELBASE	117.5 in
LENGTH	194.9 in
WIDTH	79.1 in
HEIGHT	69.9 in
PASSENGER VOLUME	130 cu ft
CARGO VOLUME	16 cu ft
CURB WEIGHT	4650-5200 lb
PERFORMANCE (C/D EST)	
ZERO TO 60 MPH	5.8-6.1 sec
ZERO TO 100 MPH	15.7-16.0 sec
1/4-MILE	14.5-14.8 sec
TOP SPEED	143 mph
FUEL ECONOMY (C/D EST)	
EPA CITY/HWY	19/27 mpg (T6)
EPA COMBINED	59 MPGe (T8)

between 4650 and 5200 pounds. To make 2.0 liters feel like 3.5, both a supercharger and a turbocharger inflate the engine's peak power and low-end responsiveness for a total of 316 horsepower and a zero-to-60 run advertised as in the low-six-second range. Married to a smooth-shifting eight-speed automatic and standard four-wheel drive, this so-called T6 version delivers the no-drama, easygoing authority that you'd expect from a brand more closely aligned with comfort than sport.

The only shortcomings are the same ones that plague all modern, boost-dependent engines with an abundance of gear





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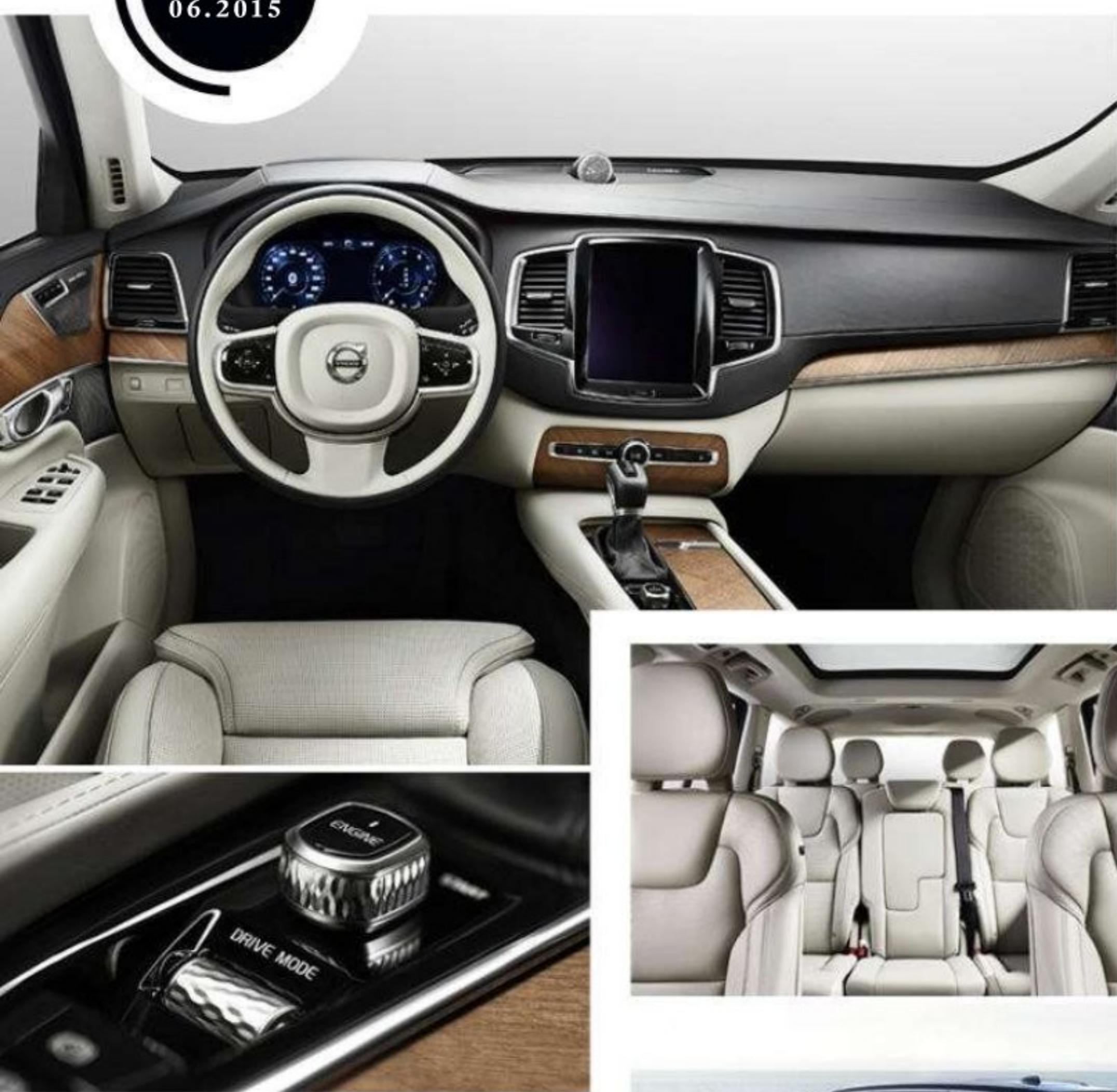
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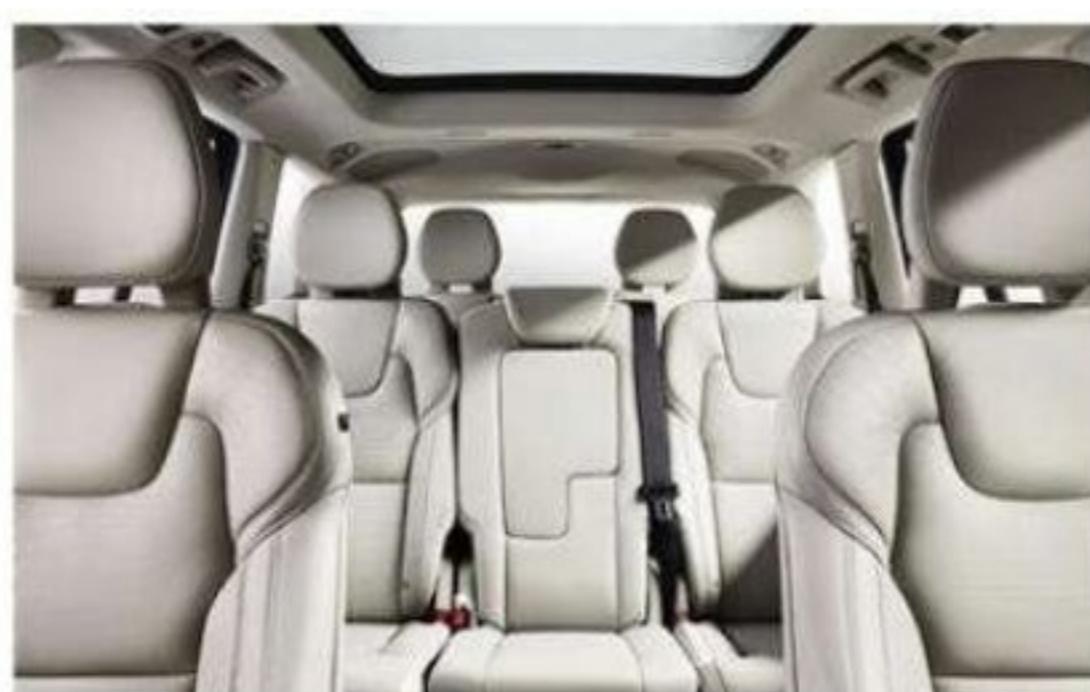
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ratios. There's no in-gear passing power, so even modest acceleration begins with a pause as the gearbox shifts down and boost builds. Pressure chargers also make for thirsty engines, and the indicated 17-mpg average seen during our test drive clashes with Volvo's claim that the XC90 will deliver best-in-class fuel economy when the EPA numbers come in.

The uplevel T8 Twin Engine is the no-compromise upgrade that allows you to have your fuel and some fun, assuming the estimated \$5000 premium doesn't compromise your ability to make the payments. This plug-in hybrid supplies 400 horsepower and 472 pound-feet of torque and should earn a 59-MPGe combined rating from the EPA.

The T8 uses the same dual-boost 2.0 four-cylinder as the T6 but removes the driveshaft connecting the front and rear axles so that the central tunnel can accommodate a 9.2-kWh lithium-ion battery pack. An 80-hp electric motor at the rear provides four-wheel-drive capability, while a smaller electric machine between the transmission and the block starts the engine, captures electricity during brak-



▲ Above left: Because keys and buttons are totally uncool ways to start a car, Volvo makes you rotate a knob to fire up the engine.

ing, and provides additional power during acceleration. A full battery charge should deliver about 20 miles of pure-electric range. In our hands, the XC90 T8 reported an average of 27 mpg over a 90-mile drive that began with a full battery.

The hybrid's electric motors polish power delivery and improve off-idle response compared with the gas-only T6. The T8 offers extra dollops of everything expected of a range-topping engine: refinement, power, and efficiency. The downside of this through-the-road hybrid system is that the engine's 295 pound-feet of torque (plus that of the small front motor) is routed entirely through the front wheels. Goosing the throttle from a stand-

still invokes a slight wiggle of torque steer.

In addition to new powertrains, the XC90 also offers our first taste of Volvo's new Scalable Product Architecture (SPA) that will ultimately underpin everything from the next S60 mid-size sedan to a possible flagship four-door above the S80. Development of SPA began in the Ford days, so it's not surprising that the XC90 employs a multilink rear suspension with an integral link similar to the designs used in the Jaguar XE, the Land Rover Discovery Sport, and the Ford Fusion and Mustang. Volvo's design differs in that it uses a single composite leaf spring transversely spanning the two control arms instead of a pair of coil springs.

Unfortunately, we can't comment on how this Volvo-Corvette mash-up rides or handles because our test cars were fitted with \$1800 worth of air springs and adaptive dampers instead of the rear leaf spring and conventional dampers. Thus equipped, the XC90 delivers a compliant ride and inoffensive handling. The selectable dynamic mode damps down a side-to-side rocking with no effect on ride quality, while accurate and nicely weighted steering makes the XC90 drive smaller than it is. A metallic clatter over big inputs such as speed bumps suggests too much compliance in some of the bushings.

Volvo's new Sensus infotainment system eschews an iDrive-like knob for a vertically oriented touch screen that's as close as it gets to a factory-installed iPad in the center console. It's a clever idea, in part because millions of Americans will be familiar with the basic controls before ever using it. Yet the smartest aspect of Sensus isn't the user interface but the hardware. By providing enough processing power to keep up with your fastest swipes and taps, Volvo excels where several have failed.

One stereotype is preserved: China's first effort here will be a value play when it goes on sale this summer. Starting at \$49,825, the XC90 includes a panoramic sunroof, passive entry, lane-departure warning, forward-collision alert, rear park assist, the Sensus system, and divinely comfortable 10-way power-adjustable front seats wrapped in leather. In other words, a laundry list of equipment that the Germans offer a la carte.

And just like that, China's first car in the U.S. is already being compared with the Germans.

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VOLKSWAGEN GOLF SPORTWAGEN

Manuals duly saved, this big-carrying, small-driving hatch still has to wait a bit longer for four-wheel drive.

by Kevin A. Wilson

If good things come to those who wait, do better things come by waiting longer? Nearly two years after it went on sale in Europe, the Volkswagen Golf SportWagen replaced the aging Jetta wagon in U.S. dealerships in April. As with other Golfs, the delay stemmed from equipping VW's Puebla, Mexico, plant to build our version.

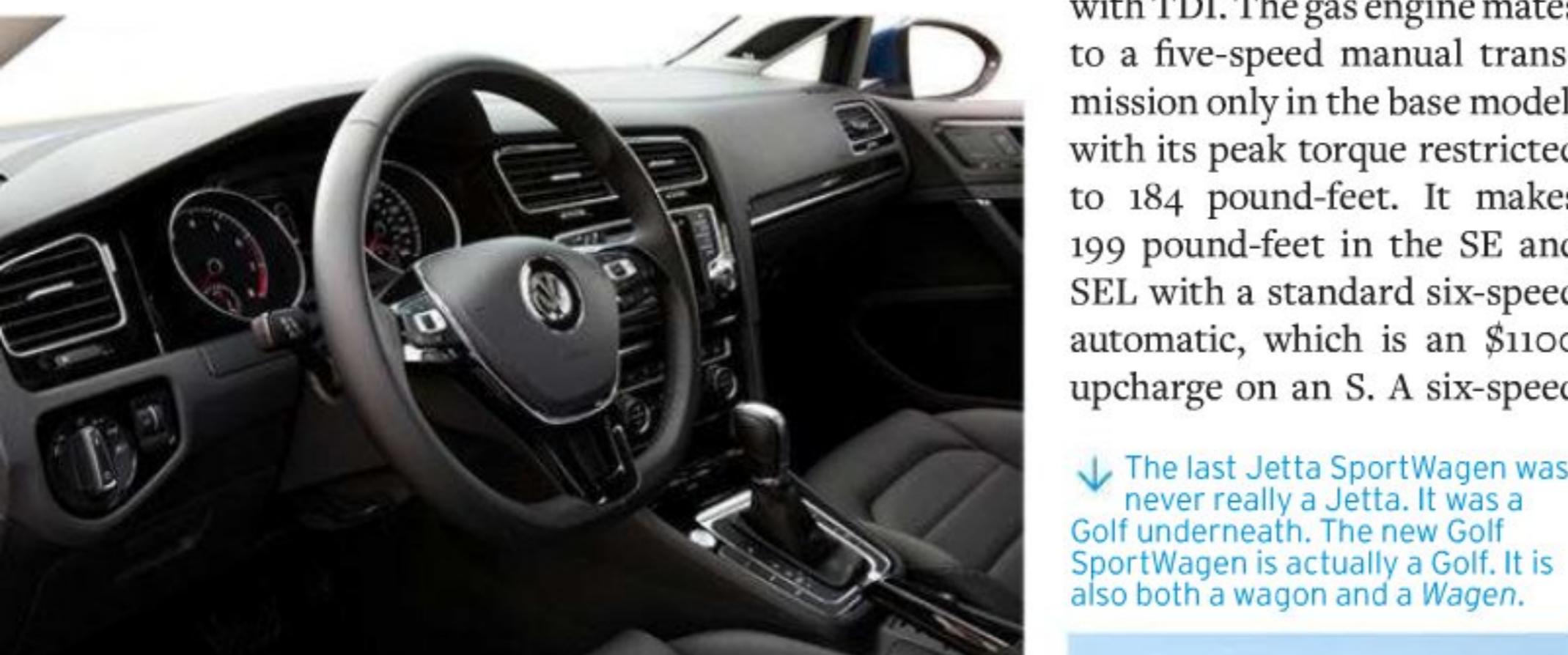
Just over a foot longer and 100 pounds heavier than the Golf, the SportWagen feels much like the 10Best-winning, seventh-generation hatchbacks. The virtues of the MQB platform's rigid structure, tight assembly, and driver-friendly character carry over but with an expanded cargo bay. With the rear seat folded, cargo

capacity of 67 cubic feet exceeds that of the last Passat wagon that VW sold here (in 2010), though it lacks that car's rear-seat legroom.

Despite its spring arrival, the SportWagen is a 2015 model. Come fall, the 2016 edition will likely bring a four-wheel-drive option, though perhaps not from Day One. The 2016s will also get upgraded infotainment systems and, at long last, a USB port.

We drove 2015 SportWagens in Austin, Texas, and the nearby Hill Country. Out of six versions available—including S, SE, and SEL trim levels with either the 1.8-liter turbocharged four-cylinder or the 2.0-liter TDI diesel—we sampled the price-leading S trim with the 1.8T and an SEL with TDI. The gas engine mates to a five-speed manual transmission only in the base model, with its peak torque restricted to 184 pound-feet. It makes 199 pound-feet in the SE and SEL with a standard six-speed automatic, which is an \$1100 upcharge on an S. A six-speed

↓ The last Jetta SportWagen was never really a Jetta. It was a Golf underneath. The new Golf SportWagen is actually a Golf. It is also both a wagon and a Wagen.



▼ SPECIFICATIONS

VEHICLE TYPE:	front-engine, front-wheel-drive, 5-passenger, 4-door hatchback
BASE PRICE	\$22,215-\$31,165
ENGINES:	turbocharged and intercooled DOHC 16-valve 2.0-liter diesel inline-4, 150 hp, 236 lb-ft; turbocharged and intercooled DOHC 16-valve 1.8-liter inline-4, 170 hp, 184-199 lb-ft
TRANSMISSIONS:	5-speed manual, 6-speed manual, 6-speed automatic with manual shifting mode, 6-speed dual-clutch automatic with manual shifting mode
DIMENSIONS	
WHEELBASE	103.5-103.7 in
LENGTH	179.6 in
WIDTH	70.8 in
HEIGHT	58.3 in
PASSENGER VOLUME	94 cu ft
CARGO VOLUME	30 cu ft
CURB WEIGHT	3100-3250 lb
PERFORMANCE (C/D EST)	
ZERO TO 60 MPH	7.0-8.5 sec
ZERO TO 100 MPH	19.0-26.0 sec
1/4-MILE	15.7-16.7 sec
TOP SPEED	125 mph
FUEL ECONOMY	
EPA CITY/HWY	25-31/35-43 mpg

stick is standard on all TDI trims, with a six-speed dual-clutch automatic optional.

The Golf SportWagen S yields a premium feel for only \$22,215, if you're willing to adjust seats manually and settle for smartphone navigation rather than the integrated kind. At 66 mph in fifth gear, the 1.8T spins at a quiet, buttery 2000 rpm, and its torque suffices to climb moderate grades without a downshift. High-rpm thrills aren't in its nature, but a Golf S four-door with this drivetrain got to 60 mph in 6.8 seconds in our tests.

The standard 15-inch wheels and all-season tires are quiet and suppress road imperfections well, but the rubber lacks turn-in bite. Upper trims bring 16-, 17-, and 18-inch wheel choices; even the S diesel gets 16s. Turn-in and handling were sharper in the SEL diesel on 18-inch wheels with all-season 225/40 tires, but we noted more impact harshness and rough-pavement hiss. The sweet spot could be a TDI in SE trim with a stick. The dual-clutch auto works well, but the six-speed manual gets slightly better EPA ratings (43 mpg highway versus 42) while shaving \$1100 off the \$33,955 MSRP on the SEL that we drove. That included \$695 for forward-collision warning and parking assist, and another \$995 for adaptive xenon headlamps with LED accents.

The Golf SportWagen combines compact-crossover utility with real-car handling, a combo sadly rare in its price segment. VW cites only the Subaru Outback and XV Crosstrek as competitors. Those, though, drive all four wheels. If you want the four-wheel-drive SportWagen—or one with a USB port or electronic accouterment fresher than 2013 standards—keep waiting for the 2016 model. ■

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JOIE CHITWOOD III

Joie Chitwood III grew up in his family's thrill show, ran the Indianapolis Motor Speedway, and now oversees Daytona International. At 46, he has a lot of career left.

C/D: Do you miss the family thrill show?

JC3: My grandfather started that thrill show in 1943, and my family ran it until 1998. That's 55 years. I spent 20 years of my life traveling around the country; we'd leave Tampa every June and not come back until October. You'd finish up a show at night, settle up with the promoter, drive for I don't know how many hours, and sleep at a truck stop or rest area. Then you'd get to your next destination, break out the equipment, and do your show at eight o'clock that night. That was our routine. Our experiences weren't so glamorous. I learned so much from working for my family back then. And those things serve me well. But if someone were to offer me that opportunity again—to spend five months on the road and live that life—I'm not sure that's for me anymore.

C/D: What was the toughest stunt to perform?

JC3: I did the human battering ram. I would lie on the hood of a car wearing a fire suit and a helmet, and they would drive me through a flaming board wall, and I would burst through with my helmet. I can't think of anything that has prepared me as well for a career in motorsports as the human battering ram. Sometimes you just have got to run through that wall, and sometimes you need to lead with your head.

The other thing I'd do is the aerial wing walk. My father would drive a car up on two wheels, I would climb out of the passenger window above him, and I would stand outside of the car. So I was 14 years old when I did that. We had to practice that stunt, and we'd put the car up on blocks and my grandfather would rock the car to simulate its moving. I did that 30 or 40 times to get it just right. Then one of the times I'm standing up there, he pushes the car back down on all four wheels. So I fall down and roll around in the dirt. I said to my grandfather, "Chief, why'd you do that?" And he said, "You've got to learn that, too."

C/D: Speaking of walls, why was that wall Kyle Busch hit this year at Daytona not covered with a SAFER Barrier?

JC3: The last thing we want to do is have any concern with driver safety. We've been putting in SAFER Barriers for years. But I don't really have an answer. We're going to fix it so that it doesn't happen again.

C/D: Do you still arrive at Daytona feeling a sense of awe?

JC3: In the moment it's tough to think that way. There are so many events. There's so much planning. I think there are moments of time when you think, "Man, we did something pretty special." I think we'll be able to do that when we complete Daytona Rising [a renovation project begun in July 2013 and expected to be complete by January 2016]. I do stress to our employees that you have to live in the moment and appreciate it while you can. But I'm probably not the best person to do that.

C/D: Will the Daytona Rising project turn the speedway into just another Florida theme park?



JC3: Our challenge, like every other sports property, is that we compete for time. The time you can use to do other things. Whether that's sitting on your couch and watching a race on TV or choosing other entertainment. We have to make sure that there are amenities at this property that get you to invest in the experience. Sixty percent of our race-day crowd comes from outside of Florida. That's a huge commitment, and we have to make sure that this property can support that investment from our fans. We have to make sure that live sporting events continue to be relevant.

C/D: What are your ambitions for Daytona beyond Daytona Rising? What will you do next?

JC3: I'm a big fan of personal and professional goals. But I guess I really haven't thought of the next stage for me. This has been such an intense experience. It's \$400 million—the largest investment in our company's history. I guess I'm a bit shortsighted looking at the project, its completion, and running Daytona. I should sit down and think about that. I don't think I'll start the stunt show again.

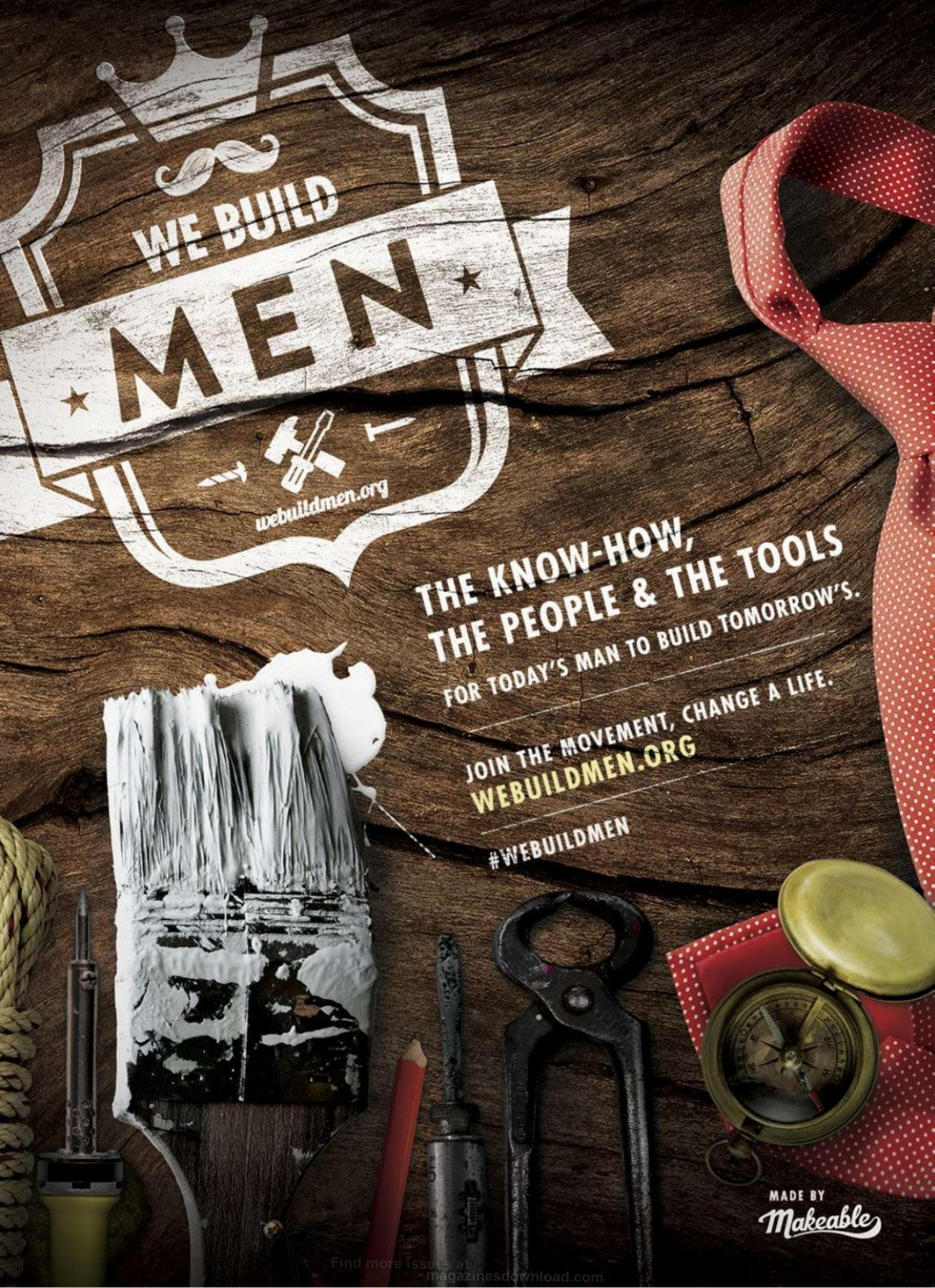
C/D: Is there anything you'd have done differently?

JC3: I'm 46 years old. I was a stuntman. I got to build Chicagoland [Speedway]. I got to run Indy. Now I'm in the middle of a huge Daytona project. And I have a 14-year-old son who's still happy to see me when I come home at night. I would not change one damn thing. —JOHN PEARLEY HUFFMAN

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